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*bulletin of*  
Duke University  
1979  
80

*Undergraduate  
Instruction*



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*Undergraduate  
Instruction*

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# University Calendar—1979–1980

## Fall 1979

<b>August</b>		
	30	Thursday—Freshman orientation begins; assemblies for all new undergraduate students
<b>September</b>		
	4	Tuesday, 9:00 A.M.—Fall semester classes begin
	5	Wednesday, 4:00–6:00 P.M.—Drop/Add begins, Intramural Building
	6, 7	Thursday, Friday, 8:30–12:30 P.M. and 2:00–4:00 P.M.—Drop/Add continues, 103 Allen Building
	10–14	Monday–Friday, 8:30–12:30 P.M. and 2:00–4:00 P.M.—Drop/Add continues, 103 Allen Building
<b>October</b>		
	12	Friday—Last day for reporting midsemester grades
	29–31	Monday–Wednesday—Registration for spring semester, 1980
<b>November</b>		
	1	Thursday—Registration for spring semester, 1980, continues
	20	Tuesday, 6:00 P.M.—Thanksgiving recess begins
	26	Monday, 9:00 A.M.—Classes are resumed
<b>December</b>		
	9	Sunday—Founders' Day
	11	Tuesday, 6:00 P.M.—Fall semester classes end
	12, 13	Wednesday, Thursday—Reading period
	14	Friday—Final examinations begin
	20	Thursday—Final examinations end

## Spring 1980

<b>January</b>		
	10	Thursday—Freshman orientation begins
	11	Friday—Registration and matriculation of new undergraduate students
	14	Monday, 9:00 A.M.—Spring semester classes begin
	15	Tuesday, 4:00–6:00 P.M.—Drop/Add begins, Intramural Building
	16–18	Wednesday–Friday, 8:30–12:30 P.M. and 2:00–4:00 P.M.—Drop/Add continues, 103 Allen Building
	21–25	Monday–Friday, 8:30–12:30 P.M. and 2:00–4:00 P.M.—Drop/Add continues, 103 Allen Building
<b>February</b>		
	22	Friday—Last day for reporting midsemester grades
<b>March</b>		
	7	Friday, 6:00 P.M.—Spring recess begins
	17	Monday, 9:00 A.M.—Classes are resumed
	24–26	Monday–Wednesday—Registration for fall semester, 1980 and summer, 1980
<b>April</b>		
	25	Friday, 6:00 P.M.—Spring semester classes end
	26–28	Saturday–Monday—Reading period
	29	Tuesday—Final examinations begin
<b>May</b>		
	5	Monday—Final examinations end
	10	Saturday—Commencement begins
	11	Sunday—Graduation exercises, conferring of degrees

# University Administration

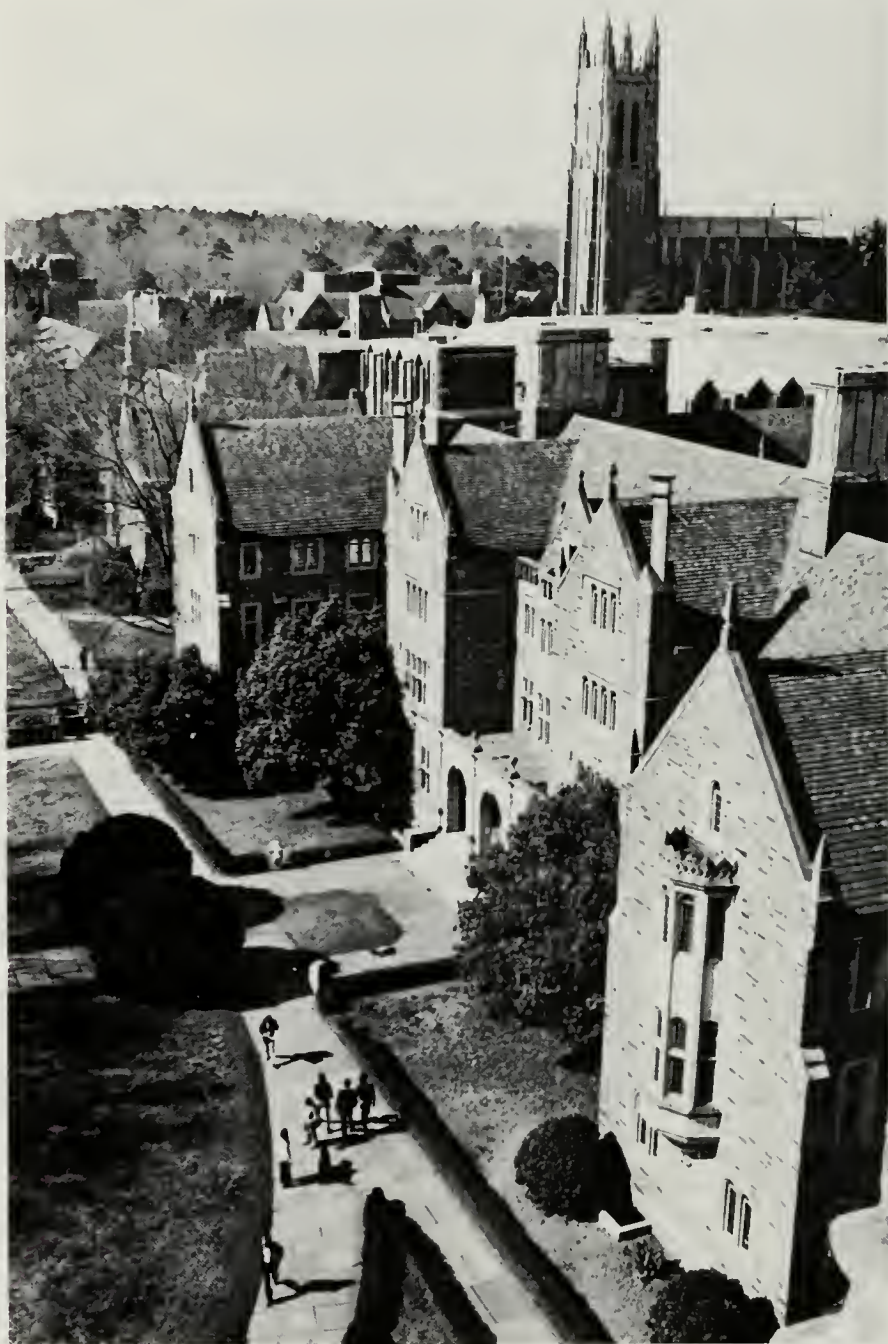
## General Administration

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A. Kenneth Pye, LL.M., *Chancellor*  
William Bevan, Ph.D., *Provost*  
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William G. Anlyan, M.D., D.Sc., *Vice-President for Health Affairs*  
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Eugene J. McDonald, LL.M., *Vice-President for Government Relations and University Counsel*  
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J. Peyton Fuller, A.B., *Assistant Vice-President and Corporate Controller*  
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John M. Fein, Ph.D., *Vice-Provost and Dean of Trinity College of Arts and Sciences*  
Ewald W. Busse, M.D., Sc.D., *Associate Provost and Dean of Medical and Allied Health Education*  
Roscoe R. Robinson, M.D., *Associate Vice-President for Health Affairs and Chief Executive Officer of Duke Hospital*  
Frederick C. Joerg, M.B.A., *Assistant Provost for Academic Administration*  
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William J. Griffith, A.B., *Assistant Provost and Dean of Student Affairs*  
Clark R. Cahow, Ph.D., *Assistant Provost and University Registrar*  
Richard L. Wells, Ph.D., *Assistant Provost and Associate Dean of Trinity College of Arts and Sciences*  
Joel L. Fleishman, LL.M., *Vice-Chancellor for Public Policy Education and Research, and Director of the Institute for Policy Sciences and Public Affairs*  
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## Undergraduate Administration

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Ruby L. Wilson, R.N., Ed.D., *Dean of the School of Nursing*  
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Dorothy J. Brundage, M.N., *Acting Director of Academic Programs, School of Nursing*  
Virginia S. Bryan, Ph.D., *Assistant Dean of Trinity College of Arts and Sciences and Coordinator for Curriculum*  
Martina J. Bryant, Ed.D., *Assistant Dean of Trinity College of Arts and Sciences*  
Joy Clausen, R.N., Ph.D., *Coordinator of Outreach Programs, School of Nursing*  
Richard L. Cox, B.D., Th.M., *Associate Dean of Student Affairs*  
James Douthat, Ed.D., *Associate Dean of Student Affairs*  
Paul B. Harrison, M.P.H., *Assistant Dean of Trinity College of Arts and Sciences and Adviser for the Health Professions*  
Edward C. Lingenheld, A.B., *Director of Undergraduate Admissions*  
Jane Clark Moorman, M.S.W., *Director of Counseling and Psychological Services*  
Elaine T. Nagey, M.Ed., *Staff Assistant for Academic Affairs, School of Nursing*  
Elizabeth S. Nathans, Ph.D., *Assistant Dean of Trinity College of Arts and Sciences*  
Jean F. O'Barr, Ph.D., *Director of Continuing Education*  
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Ella E. Shore, M.R.E., M.A., *Dean of Student Affairs, School of Nursing*  
Howard A. Strobel, Ph.D., *Assistant Dean of Trinity College of Arts and Sciences and Coordinator of Federations*  
Gerald L. Wilson, B.D., Ph.D., *Assistant Dean of Trinity College of Arts and Sciences and Coordinator for the Deans' Staff*  
Ellen W. Wittig, Ph.D., *Assistant Dean of Trinity College of Arts and Sciences*

# General Information



## Duke University

In 1839 a group of citizens from Randolph and adjacent counties in North Carolina assembled in a log schoolhouse to organize support for a local academy founded a few months earlier by Brantley York. Prompted, they said, by "no small share of philanthropy and patriotism," they espoused their belief that "ignorance and error are the banes not only of religious but also civil society which rear up an almost impregnable wall between man and happiness." The Union Institute, which they then founded, was reorganized in 1851 as Normal College to train teachers, and again in 1859 as Trinity College, a liberal arts college, which later moved from the fields of Randolph County to the growing city of Durham, North Carolina. Trinity College was selected by James B. Duke as the major recipient of a fortune when, in 1924, he provided endowment funds for the university that would bear his name.

The old Trinity College had, like almost all institutions in America at the time it was founded, been restricted to men. In 1896, Washington Duke gave an endowment with the condition that women be admitted "on equal footing with men." Thereafter, women were educated in Trinity College, and in 1930 the Woman's College was established as a separate college. Trinity College and the Woman's College continued as coordinate colleges for over forty years. To assure that women were indeed admitted "on equal footing with men," and to recognize that the education which men and women had received at Duke had long taken place in the same classrooms, the University merged these coordinate colleges in 1972 to form Trinity College of Arts and Sciences, an administrative unit responsible for undergraduate admissions, programs of instruction, academic and personal counseling, and residential life. The A.B. and B.S. degrees may be earned in the college.

Instruction in engineering started at Normal College in 1851 and was continued at Trinity College as an option in the arts and sciences program. A Department of Engineering was established at Trinity in 1910. Following the establishment of Duke University in 1924, the Departments of Civil and Electrical Engineering were formed in 1927, and a Department of Mechanical Engineering was added four years later. The three engineering departments were joined to form the Division of Engineering as a separate administrative unit of the University. In 1939 this division was renamed the College of Engineering, which in 1966 became a professional school of engineering. The Division of Biomedical Engineering was added to the School of Engineering in 1967, and it was recognized as a department in 1971. In 1974 the name of the mechanical engineering department was changed



to the Department of Mechanical Engineering and Materials Science. All four departments offer courses leading to B.S.E., M.S., and Ph.D. degrees.

The School of Nursing was established in 1931 in association with the School of Medicine and Duke Hospital. The three-year curriculum led to the Diploma in Nursing, but students were required to have a minimum of one and preferably two years of acceptable college credit prior to entry into the school. Individuals completing two years of college in addition to the three-year nursing program were awarded a Bachelor of Science in Nursing degree. From 1944 until 1957 the Bachelor of Science in Nursing Education degree was offered in cooperation with the Department of Education. A four-year program leading to the degree of Bachelor of Science in Nursing was approved by the University Board of Trustees in 1953, and in 1958 a graduate program was initiated. The School of Nursing presently offers courses leading to B.S.N. and M.S.N. degrees.

As the University developed around the core of undergraduate colleges and schools, the Graduate School expanded in areas of instruction and research. The School of Law of Trinity College became the Duke University School of Law, and other professional schools were established. The Divinity School was organized in 1926, the School of Medicine in 1930, the School of Forestry in 1938, and the Graduate School of Business Administration in 1969. In 1974, the School of Forestry was renamed the School of Forestry and Environmental Studies.

Duke, a privately supported, church-related (Methodist) university, has over 9,000 students enrolled in degree programs. These students represent nearly every state and sixty foreign countries; Duke has more than 54,000 alumni in all fifty states and in many foreign countries. The University is a member of the North Carolina Association of Colleges and Schools, the Southern Association of Colleges and Schools, and the Association of American Universities.

From academy to university some of the basic principles have remained constant. The Duke University motto, *Eruditio et Religio*, reflects a fundamental faith in the union of knowledge and religion; the advancement of learning; the defense of scholarship; the love of freedom and truth; a spirit of tolerance; and a rendering of the greatest service to the individual, the state, the nation, and the church. Through changing generations of students, the objective has been to encourage individuals to achieve, to the extent of their capacities, an understanding and appreciation of the world in which they live, their relationship to it, their opportunities, and their responsibilities.

## Resources of the University

**The Faculty.** The University faculty of approximately 1,250 maintains a tradition of personal attention to students. Many members of the faculty are, or have been, national leaders in their various professional organizations, as well as consultants to industry, government, or foundations; their contributions to scholarship include many publications related to their research. To honor outstanding faculty members, the University has established more than thirty James B. Duke Professorships, as well as other named professorships.

**The Library System.** The libraries of the University consist of the Perkins Library and its eight branches on campus: Biology-Forestry, Chemistry, Divinity, the East Campus Library, Engineering, Music, Physics-Mathematics, the Undergraduate Library, and the Pearse Memorial Library at the Duke Marine Laboratory in Beaufort; the Law Library; and the Medical Center Library. In June, 1978, these libraries contained approximately 2,800,000 volumes and ranked nineteenth in size among academic libraries in the United States. More than 14,000 periodicals, 20,000 serials, and 200 newspapers are received regularly. The collec-

tion includes about 5,000,000 manuscripts, 70,000 maps, 28,000 sheets of music, and 235,000 rolls or sheets of microtext.

*The William R. Perkins Library.* The William R. Perkins Library—the main library of the University—houses most of the books and journals in the humanities and social sciences, large files of United States federal and state documents, public documents of many European and Latin American countries, publications of European academies and learned societies, and special collections from South Asian, Far Eastern, and Slavic countries. The newspaper collection, with 16,000 volumes and 30,000 reels of microfilm, has several long eighteenth-century files, strong holdings of nineteenth-century New England papers, and antebellum and Civil War papers from North Carolina, South Carolina, and Virginia, as well as many European and Latin American papers. The manuscript collection of approximately five million items is particularly strong in all phases of the history, politics, and social and economic life of the South Atlantic region; it also includes significant papers in English and American literature. The rare books collection contains many scarce and valuable materials covering a broad range of fields, and the Latin and Greek manuscripts constitute one of the outstanding collections of its kind in the United States. The collection of Confederate imprints is the largest in the country.

The Undergraduate Library houses a small collection of books designed to meet the needs of undergraduates and contains the required reading materials placed on reserve for undergraduate courses. The branch libraries serve the academic disciplines whose names they bear. The East Campus Library is primarily for undergraduate use, but it also contains the principal collections for graduate and undergraduate study in art.

Tours of the Perkins Library are given frequently during Orientation Week and upon request throughout the year. Information about other campus libraries may be obtained from the staff in each of the libraries. Handbooks about library services and facilities are also available in each of the libraries.



*The Medical Center Library.* The Medical Center Library, located in the Seeley G. Mudd Communications Center and Library Building, provides the services and collections necessary to further educational, research, and clinical activities in the medical field. Services are available to the students, faculty, and staff of the Schools of Medicine and Nursing; of the Division of Allied Health; of Duke Hospital; and of the graduate departments in the basic medical sciences. Other students and faculty needing access to biomedical literature may apply for privileges upon application to the chief of readers' services.

Over 160,000 volumes are available, including the Trent Collection in the History of Medicine. Approximately 2,850 journal subscriptions are received currently, in addition to extensive back files of older materials. The library has several types of audiovisual materials and equipment. With the exception of certain items shelved on reserve, these materials have been integrated into the general book and journal collections and are listed in the card or journal catalogues. The Frank Engel Memorial Collection consists of a small group of books on nonmedical subjects for general reading, together with several newspapers and popular magazines. Traditional reference services are supplemented by on-line bibliographic systems and computer-produced specialized indexes.

The uniform borrowing privileges apply to all registered users. Details of loan and other services may be found in the guide which is published each year and is available at the library.

*The School of Law Library.* The School of Law Library, with approximately 240,000 volumes, serves both the University and the local legal community. The collection contains nearly all reported decisions of the federal, state, and territorial courts of the United States, British Commonwealth, and representative foreign jurisdictions. It also includes the constitutions, codes, statutes, and subsidiary legislative publications of all these jurisdictions, as well as many digests, indexes, bibliographies, and related research tools. A large section of the library collection is devoted to treatises on all phases of law and legal sciences, as well as to materials in the fields of history, economics, government, and other social and behavioral sciences relevant to legal research. There are files of selected federal documents, and since 1970 a complete set of congressional materials has been maintained. The Christie Jurisprudence Collection is located in the main reading room. Other collections include legal history, administrative materials, intellectual property, criminal procedure, school law, and briefs of the U.S. Supreme Court, the Fourth Circuit Court of Appeals, the North Carolina Supreme Court, and the North Carolina Court of Appeals. Undergraduate and graduate students whose course of study requires access to legal literature should obtain permission from the law librarian to use the collections.

**University Archives.** The Duke University Archives, the official archival agency of the University, collects, preserves, and administers the records of the University having continuing administrative or historical value. The institutional archives, which also include published material, photographs, papers of student groups and faculty, and selected memorabilia, are available for research under controlled conditions in 341 Perkins Library.

**Computation Center.** Extensive computer resources are essential for a contemporary university. Computing is provided at Duke by the Duke University Computation Center. The center is presently equipped with an IBM System 370 Model 138 computer with 1024 thousand bytes of memory, one 3330-type disk facility, five tape drives, two card readers, a card punch, three printers, and a digital plotter. This computer is connected by a high-speed microwave link to the Triangle Universities Computation Center (TUCC) located in the Research Triangle Park.



TUCC is a regional computer network formed and operated jointly by Duke University, North Carolina State University at Raleigh, and the University of North Carolina at Chapel Hill. The computer equipment at TUCC consists of two IBM System 370 Model 165s with four million bytes of memory, each, one 2314 and multiple 3330-type disk facilities, seven tape drives, drums, card readers, and printers. Also available are two small Hewlett-Packard 2000 access computers which provide BASIC interactive computing.

The IBM 370 Model 138 is used mostly for administrative computing and as a high-speed link to TUCC. Also connected to TUCC are four medium-speed terminals (card reader and printer) located in the Engineering Building, the Biological Sciences Building, the Sociology-Psychology Building, and on East Campus, as well as several low-speed keyboard terminals located at various points on campus.

All users of the Computation Center facilities are urged to obtain funds to pay for computer services. Users unable to obtain grant funding may ask for financial support from their departments when applying for services. More specific information regarding Duke computing facilities may be obtained from the Director of the Computation Center.

**Science Laboratories.** In addition to the teaching and research laboratories in the departments of natural and social sciences and in the Schools of Engineering and Nursing, there are other facilities in which some advanced undergraduates work on individual projects. These include the Duke University Marine Laboratory in Beaufort, North Carolina; the Highlands Biological Laboratory in Highlands, North Carolina; the phytotron of the Southeastern Plant Environment Laboratories, located on the Duke campus; the Duke Forest, adjacent to the campus; and the Triangle Universities Nuclear Laboratory, also on the campus.

**School of Nursing Instructional Facilities.** Facilities for instruction in the School of Nursing include resources in the undergraduate college, as well as in professional and graduate schools of Duke University and in the clinical facilities of Duke Hospital, Durham and Asheville Veterans Administration Hospitals, Lenox Baker Children's Hospital, Durham City-County Health Department, Lincoln Community Health Center, Johnson County Health Department, and other health agencies in the vicinity.

## The Undergraduate College and Schools

In Trinity College of Arts and Sciences and the Schools of Engineering and Nursing, instruction is offered by University faculty who engage in research and in graduate and undergraduate teaching. Duke offers its undergraduates the opportunity to study with many internationally recognized authorities in their disciplines and with faculty members who are jointly committed to undergraduate instruction and to the advancement of knowledge. The University recognizes that students learn not only through formal lectures, but also through the interplay of ideas among faculty members and students; thus, it offers undergraduates opportunities to test their ideas against those of their professors and to observe at close range those who have committed their lives to academic careers.

**Trinity College of Arts and Sciences.** The undergraduate liberal arts student at Duke University has many options in curricular and cocurricular programs and in residential life. The curricular offerings, the educational facilities, and the University faculty of arts and sciences provide students with an opportunity for the development of special interests and talents. The cocurricular programs and activities in the residence halls reinforce the academic curriculum and provide various ways of bringing students and faculty together. Living-learning interest

groups occupy some residences partially or totally. Fraternities and dormitories have joined in federations to sponsor academic and cocurricular programs.

**School of Engineering.** The undergraduate engineering program at Duke University is designed both for students who intend to become professional engineers and for those who desire a modern, general education based on the problems and the promises of a technological society. The environment in which students are educated is as important in shaping their future as their classroom experiences. In the Duke School of Engineering this environment has two major components: one is modern technology derived from the research and design activities of faculty and students in the school; the other is the liberal arts environment of the total University, with its humanitarian, social, and scientific emphases.

Engineering is not a homogeneous discipline; it requires many special talents. Some faculty members in the School of Engineering are designers; they are problem-oriented, concerned with teaching students how to solve problems—how to synthesize relevant information and ideas and apply them in a creative, feasible design. Other engineering faculty members function more typically as scientists; they are method-oriented, using the techniques of their discipline in their teaching and research to investigate various natural and man-made phenomena.

**School of Nursing.** The School of Nursing is committed to promoting human health by providing foundations for knowledgeable nursing services. In support of this commitment the school: (1) provides its students with an educational background which will serve as a basis for advanced study in nursing as well as continued professional and personal growth; and (2) prepares its graduates to function as practitioners of professional nursing in roles appropriate to their educational program.

Nursing is viewed as a body of knowledge, a profession, a discipline, and process. Professional nursing practice involves interacting with human systems both in health and illness in a diverse and multicultural society. Health is a purposeful, integrative, and adaptive method of functioning within the environment of which the human system is a part. Illness, disease, and disability are viewed as states of system dysfunction. Nursing practice is the application of knowledge in the promotion of health which includes restoration and maintenance of health and prevention of dysfunction. Professional nursing practice also includes collaborating with other health professionals and clients in a shared responsibility for health care.

*Nursing as a body of knowledge* is concerned with the life process in human systems as they interrelate in a complex hierarchy.

*Nursing as a profession* is based on a body of knowledge and those values, traditions, and ethics which guide nursing judgments and action.

*Nursing as a discipline* consists of a community of scholars who are committed to the improvement of health services.

*Nursing as process* is an integrated system of many processes in which both the client and the nurse participate. Substantive content is viewed as interdependent with process.

The faculty believes that a general systems perspective allows for an ecological view of people as interrelating, interdependent, and interacting complex organisms constantly influencing and being influenced by their environment. Persons are viewed as a part of nature, the supra-system in which they live in harmony in order to function in an integrated, adaptive manner. A general systems approach allows for the consideration of individuals at their subsystem level, as total human beings, and as social creatures who form networks with others in hierarchically arranged human systems of increasing complexity. Thus, persons

from the level of the individual to the level of society can be conceptualized as client and become target systems for nursing intervention. A client may be conceptualized as a patient when system dysfunction occurs and nursing is needed. The definition of client, thus broadened, provides the rationale for nursing intervention with families, groups, complex organizations, communities, and societies. This same framework also provides a basis for understanding the concept of social support which is of paramount importance in health maintenance of human systems and individuals' ability to cope with change and stressful life events.

In addition, a general systems perspective permits the organization of a vast number of theories and concepts into a meaningful framework as a basis for making nursing judgments and synthesizing learning. Fragmented knowledge, characterized by collection of isolated facts, is not easily recalled and does not furnish a systemic way of viewing nursing situations. The interrelatedness of systems concepts provides not only a framework which acknowledges the nature of individuals and their environments, but also facilitates a process orientation to nursing practice which is dynamic and applicable in a wide variety of clinical arenas. Clinical boundaries are recognized as open and cease to separate practitioners from dialogue and collaboration with their peers. Perhaps most important, a general systems perspective nurtures a hopeful philosophy of nursing practice which recognizes change, growth, and learning as possible because of the constantly changing, essential interrelatedness of all living systems.

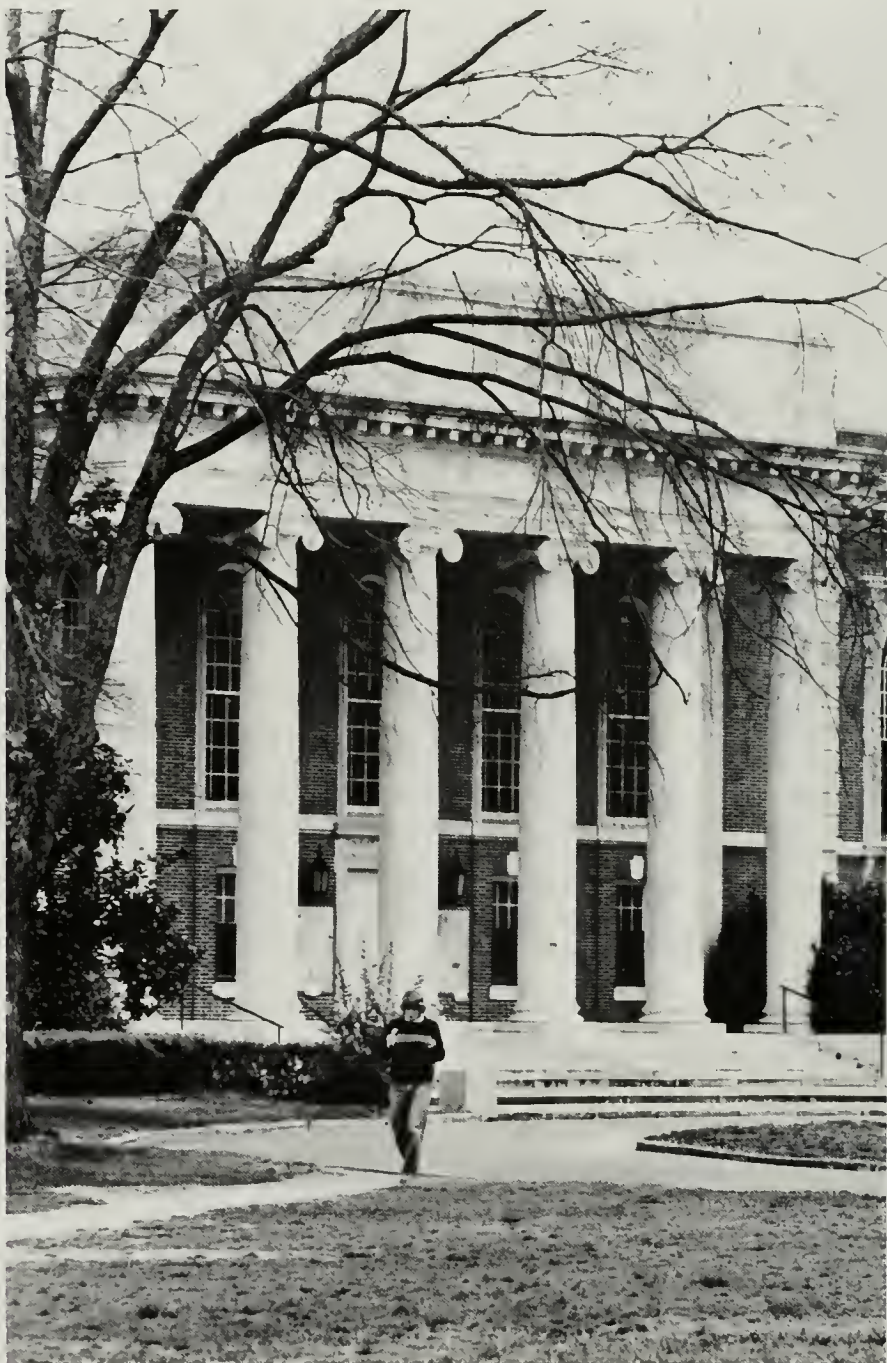
The faculty of the School of Nursing believes that the primary aim of nursing education is to provide an environment in which the student can develop self-discipline, intellectual curiosity, the ability to think critically, and acquire knowledge, skills, and values necessary for practice. It believes that learning is manifested by change of behavior, resulting from experience; that an atmosphere for learning is offered in a climate which encourages self-direction and creativity; that the students who seek admission to the school come with the intent of practicing professional nursing; and the curricula offered assist the students in realizing their intent and in stimulating the desire for continued professional growth.

### **Policy of Nondiscrimination**

Duke University does not discriminate on the basis of race, color, national and ethnic origin, sex, or handicap, in the administration of educational policies, admission policies, financial aid, employment, or any other University program or activity. It admits qualified students of any race, color, and national and ethnic origin to all the rights, privileges, programs, and activities generally accorded or made available to students.



# Degree Programs



## Degrees Offered

Duke University offers in Trinity College of Arts and Sciences the degrees of Bachelor of Arts and Bachelor of Science; in the School of Engineering, the degree of Bachelor of Science in Engineering; and in the School of Nursing, the degree of Bachelor of Science in Nursing. Within the four-year curriculum of each college or school, students have the major responsibility for designing and maintaining a course program appropriate to their background and goals. Students are assisted by faculty advisers, departmental directors of undergraduate studies, and academic deans.

Credit toward a degree is earned in units called semester-courses (s.c.), which ordinarily consist of three to four hours of instruction each week of the semester. Double-courses, half-courses, and quarter-courses are also recognized.

## Trinity College of Arts and Sciences

In the arts and sciences curriculum, either of two programs leads to the Bachelor of Arts or Bachelor of Science degree. The programs provide a variety of approaches to a liberal arts education, and in both Program I and Program II a student may study in the following divisions of learning:

*Humanities.* Art, classical studies (including Greek and Latin), comparative literature, drama, English, Germanic languages and literature, Judaic studies, music, philosophy, religion, Romance languages (including French, Italian, Portuguese, and Spanish), and Slavic languages and literatures (including Russian and Polish).\*

*Natural Sciences and Mathematics.* Botany, chemistry, computer science, genetics, geology, marine sciences, mathematics, physics, and zoology.

*Social Sciences.* Anthropology, Canadian studies, economics, education, health education, history, management sciences (including accounting), physical education, political science, psychology, public policy studies, and sociology.\*

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\*Afro-American studies, comparative area studies, linguistics, and medieval and Renaissance studies include courses in both humanities and the social sciences.

## PROGRAM I

Program I provides a flexible approach to the Bachelor of Arts or Bachelor of Science degree by enabling students to choose, within broadly stated requirements, the particular subjects that best suit their intellectual interests and educational goals. The requirements, in brief, are listed below with references to specific discussions of each.

1. The satisfactory completion of thirty-two semester-courses, including:
  - (a) at least sixteen at Duke (ordinarily including the work of the senior year);
  - (b) at least twelve at the advanced level;
  - (c) no more than four in military science; and
  - (d) no more than two with a grade of D;
  - (e) at least nineteen outside the major department or program.\*

2. A distribution of courses among the three divisions of learning.

Division I: the courses of the major. (See below and the section on Departmental Major following each department's course descriptions.)

Division II: at least four semester-courses, including two at the advanced level. (See below.)

Division III: at least two semester-courses. (See below.)

3. The satisfactory completion of one course in each of the following fields of knowledge (see below):
  - (a) one laboratory course in a natural science;
  - (b) one course in history of civilization which explores the interrelationships of major social, political, economic, cultural, and intellectual developments.
  - (c) one course in literature in any language.

These requirements are to be met in addition to fulfilling the distributional requirements, except where a course taken for the major also satisfies part of this requirement.

4. Proficiency in English composition.
5. *Effective for students who enter in September 1980, and thereafter:* the demonstration of eligibility to enter the third semester of college instruction in a foreign language by completing two semester courses in one language at Duke, or the equivalent.
6. Small-group learning experiences:
  - (a) before reaching junior status
    - (1) at least one full semester-course designated as a *seminar, tutorial, or independent study, or*
    - (2) a combination of two *preceptorials or discussion sections.*
  - (b) junior and senior years: at least two semester-course credits for *seminars, tutorials, independent study, or a thesis.*
7. Quality of work: all passing grades are expected. (See below for minimum requirements.)

**Distribution of Courses and Fields of Knowledge.** The student in Program I completes at any time within eight semesters a number of semester-courses in each of the three divisions of learning. The student must *also* complete the "fields of knowledge" requirements as stated above. The courses that satisfy the requirements for "distribution" and for "fields of knowledge" are those in which the essential subject matter and substance of the discipline are presented, i.e., not skill courses. An interdepartmental course, an interdivisional course, a military science

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\*English 1 (101S for transfer students) may be counted as one of these nineteen. An exemption from the regulation requiring at least nineteen courses outside the major applies to students who enter Duke during academic year 1979-80 and major in music.

course, or a course from a professional school may not be used to satisfy these requirements unless it is cross-listed in an arts and sciences department. Courses offered in one division may not be used to satisfy distributional requirements in another division. Courses used to satisfy the requirements for small-group learning experiences may be used to satisfy distributional requirements and the requirements for "fields of knowledge." Courses taken on the pass/fail basis do not satisfy these requirements unless offered only on a pass/fail basis.

A student must complete a certain number of courses, excluding skill courses, in each of the three divisions as follows:

*First Division.* The division of the major (or concentration) is called the first division. Each student must complete requirements for a major (concentration) in a single discipline or in an interdisciplinary program. Thereby the requirement for the first division will automatically be satisfied. (See the chapter, Academic Procedures and Information.)

*Second Division.* Each student must pass at least four semester-courses in a second division of his or her own choice. At least two of the four courses must be at the advanced level. (See the section, Advanced Work, this chapter.)

*Third Division.* Students must pass at least two semester-courses in the third division.

#### Courses That Do Not Satisfy Distributional Requirements of Program I\*

Arabic	1, 2, 63, 64
Art	53, 54, 56
Chemistry	10
Chinese	1, 2, 63, 64
Drama	101, 102, 103, 104, 105
Education	105, 106, 107, 108, 151, 152, 161, 162
English	1, 10, 50, 65S, 66S, 110
French	1-2, 63, 74, 76, 181
German	1-2, 63, 105, 181
Greek	1-2, 181
Health Education	134
Italian	1-2, 63, 74
Latin	1-2, 181
Persian	1, 2
Physical Education	4, 6, 7, 11, 12, 14, 15, 16, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 37, 38, 39, 40, 41, 42, 43, 45, 46, 48, 50, 51, 52, 53, 60, 61, 62, 63, 65, 67, 68, 69, 70, 100, 102, 105, 106, 117, 132, 163, 164, 166, 173
Hindi-Urdu	181, 182
Japanese	1, 2, 63, 64
Mathematics	19
Music	7-8, 97, 107-108, 151, 152, Applied Music (except for tutorials)
Political Science	138, 236
Portuguese	181
Psychology	117
Religion	115-116, 139
Russian	1, 2, 63, 64
Spanish	1-2, 63, 74, 76, 181
Swahili	1, 2, 63, 64
Zoology	198

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\*In addition, certain other courses do not satisfy distributional requirements

**Proficiency in English Composition.** Each student is required to demonstrate ability to write effective English prose either by presenting a score of 700 or higher on the College Entrance Examination Board (CEEB) English Composition Achievement Test, or by passing a course in English composition, usually in the first semester of enrollment.



**Small-Group Learning Experiences.** By supplementing the classroom and lecture methods of instruction, small-group learning experiences assure the student opportunities to engage in discussion, develop skills, refine judgment, and defend ideas when challenged. A *seminar* (ordinarily indicated by the suffix *S*) is an independent course of twelve to fifteen (exceptionally to twenty) students who, together with an instructor, engage in disciplined discussion. The number of meeting hours per semester is the same as for regular courses of equivalent credit. Instructors are encouraged as a minimum to hold, at midsemester, individual conferences between the professor and each student in the course and to present, at the end of the semester, to each student a written evaluation of the student's work. A *discussion section* (*D*) is a group of approximately ten students and an instructor, in which discussion is the paramount characteristic; it is an integral part of a regular course and every member of the class is enrolled. A *preceptorial* (*P*) is a group of usually no more than twelve students and an instructor in which discussion is the primary component. It is an additional and optional unit attached to a regular course involving one extra meeting per week. No additional course credit is given for a preceptorial. A *tutorial* (*T*) is a group of one to five students and an instructor meeting for discussion which is independent of any other course. For *independent study* students pursue their own interests in reading, research, or writing, but are counseled by an instructor. See the section on independent study in the chapter, Academic Procedures and Information. The requirements for small-group learning experiences are listed under Program I, above.

**Major (Concentration).** Although students in Program I are required to achieve breadth of intellectual experience by taking courses in each of the three divisions of learning, they are also expected to acquire some mastery of a particular discipline or interdisciplinary area. Each student will, therefore, complete a departmental major, an interdisciplinary major, or an interdepartmental concentration. (See the section on declaration of major or division in the chapter, Academic Procedures and Information.)

*Departmental Major.* A student must pass a number of courses within a department, as specified by that department, as well as courses in other departments which may be necessary or helpful for effective performance in the major. These requirements are set forth in the section following each department's course descriptions. A major consists of at least five courses beyond the introductory or basic prerequisite level in one department, but may not include more than eight semester-courses for the A.B. degree or more than ten semester-courses for the B.S. degree. The student may elect a more intensive major program, but no more than thirteen semester-courses count toward the graduation requirement of thirty-two semester-courses. At least half the courses submitted toward fulfillment of a student's major field must be taken at Duke. Departments may make exceptions to this rule in special circumstances. A student who completes requirements for the major in two departments may have both majors recorded on the official record, provided the second major is offered within the degree to be granted for completion of the first major. Majors offered within each degree are listed in the section on declaration of major or division in the chapter, Academic Procedures and Information.

*Interdisciplinary Major.* A student may satisfy the requirement by completing work prescribed for a major in an approved program. These programs include Afro-American studies; comparative area studies: Africa, Asia, Latin America; comparative literature; genetics; and medieval and Renaissance studies.

*Interdepartmental Concentration.* A student may pursue an interdepartmental major program designed by the student and advisers as an alternate means of satisfying the major requirement. An interdepartmental concentration consists of at least three courses beyond the introductory level in each of two or more departments.



(See the section on declaration of major or division in the chapter, Academic Procedures and Information.)

**Advanced Courses.** Of the thirty-two courses required for graduation, at least twelve must be at the advanced level, i.e., 100- and 200-series.

**Military Science Courses.** No more than four courses in the military sciences may be counted among the thirty-two courses required for graduation. These courses are normally taken in the junior and senior years. Additional courses, although not counted toward graduation, do appear on a student's permanent academic record. Military science courses do not satisfy distributional requirements.

**Residence.** A residence period of four academic years (eight semesters) is the normal amount of time a student may take to earn either the Bachelor of Arts or the Bachelor of Science degree. This period may be extended for one or two semesters by a student's academic dean for legitimate reasons, if it seems probable that an extension will enable the student to complete all remaining requirements for graduation. A student will not be permitted residence of more than five academic years, that is, ten semesters, in order to be graduated.

For the minimum residence period, at least sixteen courses must be satisfactorily completed at Duke. If only sixteen courses are taken at Duke, they must include the courses of the final two semesters. A student with more than sixteen courses at Duke may take two courses in the last year at another approved institution. A student who has completed six full semesters at Duke may take four courses in the last year at another approved institution. Courses taken elsewhere must be approved by the student's adviser and academic dean.

Former students of Trinity College or the Woman's College who have been out of college for at least six years may, with certain provisos, take up to eight semester courses in another institution of approved standing in final fulfillment of graduation requirements. Further information can be obtained from the Associate Dean of Trinity College of Arts and Sciences.

**Quality of Work (Continuation Requirements).** A student must achieve a satisfactory record of academic performance each semester and make satisfactory progress toward graduation each year to continue enrollment in college. A student who fails to meet the minimum requirements described below must leave college for at least two semesters. A summer session may be counted as a semester. The student may apply to the Associate Dean of Trinity College of Arts and Sciences for readmission. If, after readmission, the student again fails to meet continuation requirements, the student will be ineligible, except in extraordinary instances, for readmission to the college.

*Satisfactory Performance Each Semester.* To continue from one semester to a successive semester or summer session a student is expected to achieve passing grades in all courses. In the event that one does not pass all courses the following minimum requirements must be met: after the first semester of the freshman year a student who fails more than one course must withdraw from college; a freshman or transfer student who fails more than two courses in the first semester must withdraw. A student who for any special reason has been permitted to enroll for fewer than four courses must earn all passing grades, with the exception that a freshman or transfer student may continue from the first to the second semester despite having earned a failing grade in one course.

Where continuation is in question, incomplete work in any course must be completed with a passing grade in time for final grades to be submitted to the Registrar no later than the day preceding the first day of classes of the spring semester, or prior to the first day of classes of the second term of the summer

session, as appropriate. Otherwise, incomplete work in any course is considered a failure to achieve satisfactory performance in that course. In the case of incomplete work in the spring semester, this requirement applies whether or not the student plans to attend one or more terms of the summer session. The student, however, may not enroll in a summer term at Duke until the requirement of satisfactory performance each semester has been satisfied.

Any student excluded from the college under the provisions of these regulations may on request have the case reviewed by the Associate Dean of Trinity College of Arts and Sciences.

*Student Request For Assignment of a Temporary Incomplete.* If because of illness, emergency, or reasonable cause a student cannot complete work for a course, the student may request in writing the assignment of a temporary *I* (incomplete) for the course. If the request is approved by the instructor in the course and by the student's academic dean, then the student must satisfactorily complete the work prior to the last day of classes of the subsequent semester or a grade of *F* will be recorded for the course. A student not enrolled in the University during that subsequent semester will have until the end of the next semester of matriculation to clear the *I*. If a student whose work is incomplete is also absent from the final examination, an *X* is assigned for the course. Seniors are expected to complete all courses before graduation.

For purposes of determining whether a student satisfies continuation requirements, an *I* is counted as failing to achieve satisfactory performance in that course. If the incomplete is received in the fall semester and becomes a factor in determining continuation in the college, it must be satisfactorily completed prior to the beginning of classes for the spring semester. If the incomplete is received in the spring semester it must be satisfactorily completed prior to the first day of classes for the second term of the summer session, as appropriate. No student who has incomplete course work from both the spring semester and the summer session may continue into the fall semester.

*Satisfactory Progress Toward Graduation.* Each year prior to the beginning of fall semester classes, a student must have made satisfactory progress toward fulfillment of curricular requirements to be eligible to continue in the college; i.e., a certain number of courses must have been passed at *Duke* according to the following schedule:

*To be eligible to continue to the:*

3rd semester  
4th semester  
5th semester  
6th semester  
7th semester  
8th semester

*A student must have passed at Duke:*

6 semester-courses  
10 semester-courses  
14 semester-courses  
18 semester-courses  
22 semester-courses  
26 semester-courses

Courses in the arts and sciences taken in the summer terms at *Duke* may be used to meet this requirement. No more than two courses completed with *D* grades may be counted toward fulfilling the requirements.

## PROGRAM II

**Nature and Purpose.** Program II is an alternate approach leading to either the A.B. or the B.S. degree. This program offers the student who has an unusual interest or talent in a single field, or an unusual combination of interests or talents in several fields, an opportunity to plan and carry out a special curriculum adapted to these interests and needs. The student and a departmental Program II adviser design an individual plan of study for the whole, or the remainder, of the student's college career. They assess background, needs, and ambitions and evaluate the

resources inside and outside the University as means of satisfying those ambitions. They consider what academic courses would be useful and also take into account that a full semester or year of independent study or work/study on or off campus, or a period of study abroad, might be appropriate. Each curriculum is tailored to the special interests and talents of the student for whom it is designed. Topics have included Appalachian cultural studies, twentieth-century musical composition and conducting, topics in plant physiology, and the political implications of contemporary Christian thought.

**Admission.** Students interested in Program II should confer with the Director of Undergraduate Studies in the departments closest to their interests. If the student seems eligible for Program II, the director or other adviser, or an interdepartmental committee, will counsel the student concerning the design of the curriculum. When an interdepartmental committee is needed, one department will bear administrative responsibility. The curriculum must be approved by the department and also by the Committee on Program II of the Undergraduate Faculty Council of Arts and Sciences. Upon endorsement by that committee, it becomes an obligation assumed by the student, although it may be modified later with the approval of the department and the Committee on Program II. A description of the plan is sent to the student's academic dean, and each semester the student's progress in achieving the plan is also reported.

Until formally accepted into Program II, a student should register for courses to satisfy the curricular requirements of Program I. Upon acceptance into Program II, a student is relieved of most, but not all, requirements expected of Program I students. Should Program II be dropped for any reason, the student assumes all requirements of Program I.

Usually, a student will be accepted into Program II only after being in residence at Duke for one or two semesters. However, a transfer student or freshman who desires to be admitted in the first semester at Duke is invited to write the Office of Undergraduate Admissions before matriculation, providing a statement of qualifications and plans as a prospective Program II student. Ordinarily students are ineligible to apply for admission to Program II after their third year.

**General Requirements.** Apart from the requirements arising from the approved plan of work, a Program II student must satisfy certain general requirements: thirty-two semester-course credits for graduation; the regulations on military science courses; and residence, although the requirements relating to the last two semesters may be adjusted to suit the student's approved plan of work.

## TWENTIETH-CENTURY AMERICA SEMESTER

The Twentieth-Century America Semester explores modern American society in a group of interrelated courses from the perspectives of history, literature, sociology, religion, and political thought. The program offers four courses in the fall term, of which participants must take at least three. Some twenty-five students are selected for the program; all undergraduates may apply.

This special program provides the student with the opportunities that come from relatively small classes (often of seminar format), a program of interrelated and mutually reinforcing courses, and close relationships with professors and stimulating fellow students.

For courses that the program has offered, see the descriptions under English 58, History 92, Sociology 101, Political Science 144S, and Religion 59. Further information and application forms may be obtained from the academic deans.



## UNDERGRADUATE-PROFESSIONAL COMBINATION PROGRAMS

The Bachelor of Science or Bachelor of Arts may be awarded to a student who successfully completes three years in an approved curriculum in arts and sciences at Duke and also completes the first year of study in the Duke School of Forestry and Environmental Studies, School of Law, Graduate School of Business Administration, or Medical School. After two years at Duke University and before transfer to a professional school, a student may apply for a combination undergraduate-professional program through the appropriate academic dean. To be eligible for the combined program a student must complete successfully all baccalaureate requirements, except eight elective courses, and must be admitted to the professional school. An exception is made for the student majoring in management sciences and entering the Graduate School of Business Administration; such a student need not complete the major as an undergraduate. An eligible student thus registers as a first-year student in the professional school. Upon satisfactory completion in the professional school of the work of the first two semesters, or equivalent, the student will be awarded a baccalaureate degree.

## PREPARATION FOR GRADUATE AND PROFESSIONAL SCHOOLS

Students planning to enter a graduate or professional school should consult their academic deans and faculty advisers at the earliest opportunity. Since many graduate and professional schools require special tests for students seeking admission, information regarding requirements should also be obtained from the catalogues of the appropriate schools. Counseling and Psychological Services will provide applications for the testing programs.

**Graduate Schools of Arts and Sciences.** As soon as practicable, students should ascertain the requirements of the graduate schools which they are considering and should consult an adviser in the field of the proposed advanced study. Most graduate schools have requirements in foreign languages, and candidates for the degree of Doctor of Philosophy may be required to pass reading examinations, usually in German and French.

**Graduate Schools of Engineering.** Students interested in graduate work in engineering should consult the Dean of the School of Engineering or the Director of Graduate Studies in one of the engineering departments. Most engineering graduate schools require that a candidate have the equivalent of a Bachelor of Science in Engineering degree; however, students in the natural and social sciences may obtain conditional admission if they have a sufficient background in mathematics.

**Graduate Schools of Nursing.** Students interested in entering either graduate or postbaccalaureate programs in nursing should consult their faculty advisers, the Director of Academic Programs, or the Dean of the School of Nursing.

**Graduate Schools of Business Administration.** Students seeking advice concerning preparation for graduate school in business administration may consult the Department of Management Sciences or the adviser for graduate business programs in Trinity College. Many graduate programs in business administration are designed specifically for students with little or no undergraduate work in business. Some schools require at least one year of calculus for admission. Additional courses in mathematics can be helpful, especially linear algebra, probability, statistics, and advanced calculus. Other areas which can be of special value are philosophy of science and formal logic, one or more of the behavioral sciences, economics, the physical sciences, and engineering.

**Medical and Dental Schools.** Students planning to enter schools of medicine, dentistry, or veterinary medicine can prepare for admission by completing any of the regular departmental majors in Program I or by completing Program II, and by taking those courses required by the professional schools of their choice. Virtually all medical schools and most schools of dentistry and veterinary medicine require the same basic group of college premedical courses—a year of biology, a year each of inorganic and organic chemistry, and a year of general physics. In addition, many schools require a year of English and a few require a foreign language. About a third of all medical schools now require a year of calculus and some suggest courses in statistics. For a complete listing of these and other requirements set by each medical school, see *Medical School Admission Requirements*, published annually by the Association of American Medical Colleges. Current copies, as well as information concerning careers in dentistry, veterinary medicine, osteopathic medicine, and many allied health professions, are available in the office of the Adviser for the Health Professions. Students should discuss their programs of study with their major advisers, academic deans, and with the adviser for the health professions.

**Law Schools.** Students who plan to prepare for law school should seek diversity in their undergraduate course programs and specialize in one or more areas. They may choose virtually any field for their major work. Although no specific courses are required, prelaw students have often chosen from the following courses: Management Sciences 53; Economics 51, 52; English 55, 56; History 21, 22, 91, 92, 105, 106; Philosophy 41 and 48; Political Science 91; Sociology 91.

For a fuller discussion of undergraduate preparation for the study of law, students should refer to the *Bulletin of the School of Law* or consult with the prelaw adviser in the college.

**Theological Schools and Religious Work.** Students contemplating theological study should correspond at the earliest opportunity with the appropriate schools and with the authorities of their churches to learn how to prepare for the specific programs they expect to enter. Probably, they will find that they should consider the following subjects: English language and literature; history, including non-Western cultures as well as European and American; philosophy, particularly its history and its methods; natural sciences, both the physical and the life sciences; psychology, sociology, and anthropology; the fine arts and music; Biblical and modern languages; religion, both in the Judaeo-Christian and in the Near and Far Eastern traditions. Some seminaries require Greek or Hebrew for admission. It is the understanding gained in these fields rather than the total number of credits or semester hours earned which is significant.

## The School of Engineering

Duke University offers in the School of Engineering programs of study which lead to the degree of Bachelor of Science in Engineering (B.S.E.) with majors in the Departments of Biomedical, Civil, and Electrical Engineering, and the Department of Mechanical Engineering and Materials Science. Special programs of study in interdisciplinary fields leading to the B.S.E. degree may be arranged with approval of the engineering faculty. The four curricula in the engineering departments are accredited by the Engineers' Council for Professional Development.

For graduation with a Bachelor of Science in Engineering degree, a student must complete successfully a minimum of thirty-two semester-courses. These thirty-two semester-courses must include the following:

## General Requirements

English .....	1 s.c.	This requirement is met by completing English 1.
Mathematics .....	4 s.c.	This requirement is met by completing Mathematics 31*, 32*, 103, and 104 or 111.
Natural Science .....	4 s.c.	This requirement is met by completing Chemistry 11 and Physics 51 and 52, and an elective course in one of the natural science departments.
Social Sciences and Humanities .....	4 s.c.	This requirement is met by completion of four courses from at least two departments in the humanities and social sciences. This program of courses should reflect a rationale or fulfill an objective appropriate to the engineering profession. Courses selected must be those which present essential subject matter and substance of the discipline; for example, no introductory skill courses may be used to satisfy this requirement. Likewise, courses devoted primarily to subjects such as accounting, industrial management, finance, personnel administration, introductory language, and ROTC normally do not fulfill this objective regardless of their general value in the total engineering curriculum. House courses may not be used to satisfy this requirement.
Engineering and Applied Sciences .....	4 s.c.	This requirement is met by completion of at least one course from each of four of the following six areas; electrical science, information and computer science, mechanics (solid and fluid), materials science, systems analysis, and thermal science and transfer processes. See departmental requirements, which follow, for any specific courses to be included.
Digital Computation .....		Students are expected to have acquired digital-computer programming capability before their sophomore year. The programming capability may be satisfied by prior experience or by passing Engineering 51 or Computer Science 51.

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\*Mathematics 33 and 34 are acceptable in lieu of Mathematics 31 and 32

## Departmental Requirements

Departmental Specifications .....	15 s.c.	The department administering the major field of study will specify this requirement. In general, it will consist of both required courses and electives to be planned in consultation with the departmental adviser. See the individual departmental requirements, which follow.
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†Total Minimum Requirement .....

32 s.c.

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†A maximum of two semester-courses of junior- or senior-level air science or naval science course work may be counted in satisfying the minimum requirements of thirty-two semester-courses for a baccalaureate degree in engineering. These courses must be included in the fifteen semester-courses listed under departmental requirements. All other courses completed in air science or naval science are taken in addition to the minimum program.

## Biomedical Engineering Departmental Requirements

All general requirements and departmental requirements are incorporated in the following sequence, only one of several possible sequences. The student is encouraged to choose electives and select a sequence which develops broad intellectual interests.

## Freshman Year

First Semester	Courses	Second Semester	Courses
Chemistry 11 .....	1	Chemistry 12 .....	1
English 1 .....	1	†Physics 51 .....	1
Mathematics 31 .....	1	Mathematics 32 .....	1
Engineering 51 .....	<u>1</u>	Social Science or Humanities Elective .....	<u>1</u>
	4		4

## Sophomore Year

First Semester	Courses	Second Semester	Courses
Physics 52 .....	1	Electrical Engineering 63 .....	1
Biomedical Engineering 111 .....	1	Biomedical Engineering Elective .....	1
Mathematics 103 .....	1	Mathematics 135 .....	1
Social Science or Humanities Elective .....	<u>1</u>	Elective .....	<u>1</u>
	4		4

## Junior Year

First Semester	Courses	Second Semester	Courses
*Biomedical Engineering 163 .....	1	Biomedical Engineering 164 .....	1
*Biomedical Engineering 131 .....	1	Biomedical Engineering 132 .....	1
*Engineering 135 .....	1	Biomedical Engineering 125 .....	1
Elective .....	<u>1</u>	Biology Elective .....	<u>1</u>
	4		4

## Senior Year

First Semester	Courses	Second Semester	Courses
Biomedical Engineering Elective .....	1	Biology Elective .....	1
Biomedical Engineering 101 .....	1	Elective .....	1
Elective .....	1	Elective .....	1
Social Science or Humanities Elective .....	<u>1</u>	Social Science or Humanities Elective .....	<u>1</u>
	4		4

\*Premedical students should defer one course to permit taking two biology electives and Chemistry 151–152 before the end of the junior year

†Physics may be deferred for one semester

## Civil Engineering Departmental Requirements

The general requirements and the departmental requirements are all incorporated in the following typical program.

### Freshman Year

First Semester	Courses	Second Semester	Courses
Chemistry 11 .....	1	Civil Engineering 16 .....	$\frac{1}{2}$
English 1 .....	1	Engineering 11 .....	$\frac{1}{2}$
Mathematics 31 .....	1	Physics 51 .....	1
Engineering 51 .....	<u>1</u>	Mathematics 32 .....	1
	4	†Approved Elective .....	<u>1</u>
			4

### Sophomore Year

First Semester	Courses	Second Semester	Courses
Engineering 75 .....	1	Engineering 83 .....	1
Mathematics 103 .....	1	Engineering 123 .....	1
Physics 52 .....	1	Mathematics 111 .....	1
†Approved Elective .....	<u>1</u>	†Approved Elective .....	<u>1</u>
	4		4



## Junior Year

First Semester	Courses	Second Semester	Courses
Civil Engineering 131.....	1	Civil Engineering 123.....	1
Engineering 145.....	1	‡Civil Engineering 133.....	1
*Engineering Science Elective.....	1	Civil Engineering 139.....	1
†Approved Elective.....	<u>1</u>	†Approved Elective.....	<u>1</u>
	4		4

## Senior Year

First Semester	Courses	Second Semester	Courses
Civil Engineering 124.....	1	Civil Engineering 116.....	1
‡Civil Engineering 134.....	1	†Approved Elective.....	1
†Approved Elective.....	1	†Approved Elective.....	1
†Approved Elective.....	<u>1</u>	†Approved Elective.....	<u>1</u>
	4		4

\*Electrical Engineering 43, Engineering 72, or Engineering 101

†Part of a program of elective courses planned with departmental approval to suit the interests and abilities of the individual student. In addition to satisfying the social science-humanities requirement of the School of Engineering, the program must include a minimum of one elective course in natural science. The program should also include a minimum of three *emphasis electives* which are designed to reinforce the student's major area of study. One emphasis elective must be a civil engineering course.

‡Civil Engineering 133 or 134 may be replaced by an approved Civil Engineering design elective.

## Electrical Engineering Departmental Requirements

The general requirements and the departmental requirements are all incorporated in the following typical program. This program is presented as a guide to assist students in planning their four-year program and should not be viewed as an inflexible sequencing of courses.

### Freshman Year

First Semester	Courses	Second Semester	Courses
Mathematics 31.....	1	Mathematics 32.....	1
Chemistry 11.....	1	Physics 51.....	1
English 1.....	1	*Approved Elective.....	1
†Approved Elective.....	<u>1</u>	†Approved Elective.....	<u>1</u>
	4		4

### Sophomore Year

First Semester	Courses	Second Semester	Courses
Electrical Engineering 63.....	1	Electrical Engineering 113.....	1
Mathematics 103.....	1	Mathematics 104.....	1
Physics 52.....	1	‡Electrical Engineering.....	1
*Approved Elective.....	<u>1</u>	*Approved Elective.....	<u>1</u>
	4		4

### Junior Year

First Semester	Courses	Second Semester	Courses
‡Electrical Engineering.....	1	‡Electrical Engineering.....	1
*Approved Elective.....	1	*Approved Elective.....	1
*Approved Elective.....	1	*Approved Elective.....	1
*Approved Elective.....	<u>1</u>	*Approved Elective.....	<u>1</u>
	4		4



## Senior Year

First Semester	Courses	Second Semester	Courses
†Electrical Engineering .....	1	†Electrical Engineering .....	1
*Approved Elective.....	1	*Approved Elective.....	1
*Approved Elective.....	1	*Approved Elective.....	1
*Approved Elective.....	<u>1</u>	*Approved Elective.....	<u>1</u>
	4		4

\*Part of a program of elective courses planned with departmental approval to suit the interests and abilities of the individual student. These approved electives must include six social science-humanities courses, one natural science course, one mathematics course beyond Mathematics 104, and five courses in engineering science, physical science, computer science, or mathematics (at least one of these five must be from the School of Engineering, and at least one from two of the following areas: information and computer science, materials science, mechanics, and thermal science). The remaining four approved electives may be any courses in the University offered for academic credit.

†Suggested electives are EE42, EE43, and E51 or CPS 51

‡These five courses in electrical engineering must be at the 100-level or above (excluding independent study and project courses)

All Electrical Engineering students are requested to supplement the regular departmental requirements by choosing one of the following options:

Option 1. The student selects as many electives as possible from one of the major departmental areas:

*Electronics:* EE 42, 43, 103, 143, 157, 161, 164, 185, 186, 196, 199, 224, 225, 226, 234, 235, 236, 237, 238.

*Computers and Information Processing:* EE 42, 157, 161, 185, 186, 203, 205, 206, 208, 224, 241, 251.

*Electromagnetics and Solid State:* EE 43, 143, 164, 196, 211, 212, 213, 215, 217, 271, 272.

*Communications and Control Systems:* EE 103, 143, 157, 161, 185, 186, 199, 203, 204, 205, 206, 222, 224, 225, 241, 251.

Option 2. The student plans a program of study with an adviser which will achieve a definite academic goal. This option may include taking a second major in another department or completing the requirements to enter another professional school (e.g., business, law, medicine).

## Mechanical Engineering and Materials Science Departmental Requirements

The general requirements and departmental requirements are all incorporated in the following typical program.

### Freshman Year

First Semester	Courses	Second Semester	Courses
Chemistry 11 .....	1	*Engineering Science Elective .....	1
Engineering 51.....	1	Mathematics 32.....	1
English 1 .....	1	Physics 51 .....	1
Mathematics 31.....	<u>1</u>	†Approved Elective.....	<u>1</u>
	4		4

### Sophomore Year

First Semester	Courses	Second Semester	Courses
*Engineering Science Elective .....	1	*Engineering Science Elective .....	1
Mathematics 103.....	1	*Engineering Science Elective .....	1
Physics 52.....	1	Mathematics 111.....	1
†Approved Elective.....	<u>1</u>	†Approved Elective.....	<u>1</u>
	4		4

### Junior Year

First Semester	Courses	Second Semester	Courses
Mechanical Engineering 115 .....	1	Mechanical Engineering 136 .....	1

Engineering 123.....	1	Mechanical Engineering 150 .....	1
Mechanical Engineering 126 .....	1	†Approved Elective.....	1
†Approved Elective.....	<u>1</u>	†Approved Elective.....	<u>1</u>
	4		4

Senior Year

First Semester	Courses	Second Semester	Courses
Mechanical Engineering 141 .....	1	‡Advanced Technical Elective .....	1
‡Advanced Technical Elective .....	1	‡Advanced Technical Elective .....	1
‡Advanced Technical Elective .....	1	†Approved Elective.....	1
†Approved Elective.....	<u>1</u>	†Approved Elective.....	<u>1</u>
	4		4

\*The four courses in engineering science must be Engineering 72, 75, 83, and 101.  
†Part of a program of elective courses planned with departmental approval to suit the interests and abilities of the individual student. These approved electives must include five social science-humanities courses and one course in natural science  
‡The advanced technical electives should be chosen to emphasize a professional objective in the curriculum.

The major requirements are included in the minimum total of thirty-two courses listed under general requirements and departmental requirements. Specific courses which must be included are Engineering 72, 75, 83, 101, and 123; Mechanical Engineering 115, 126, 136, 141, and 150.

**Declaration of Major.** A student is urged to declare a major by the time of registration for the first semester of the sophomore year, but is required to do so by the time of registration for the first semester of the junior year. Declaration of major is accomplished by completing a form available in the Office of the Dean of Engineering.

**Double Major.** If an engineering student completes simultaneously the requirements for a departmental major in arts and sciences and the requirements for a B.S.E. degree, or satisfies simultaneously the requirements for two engineering majors, the official record will indicate this fact. However, the Director of Undergraduate Studies for the second major must certify that the departmental major requirements have been met. The student must initiate the procedure, either through the Dean of the School of Engineering or through the Director of Undergraduate Studies in the second department. The completion of the requirements for the major in this department must be confirmed no later than the time of registration for the final semester. Courses which are common to both majors shall be counted toward satisfying the requirements of both majors.

**Interdisciplinary Programs in Engineering.** This major parallels the majors in biomedical, civil, and electrical engineering, and mechanical engineering and materials science. It provides for special programs of study in interdisciplinary fields, such as energy conversion, engineering mechanics, materials science, ocean engineering, pollution control, systems and controls, and urban engineering, leading to the B.S.E. degree, which may be arranged with approval of the engineering faculty. Any student, in consultation with the adviser or another faculty member, may propose a unique combination of courses designed to meet particular career objectives. The proposal should be submitted to the Engineering Faculty Council, through the Dean of the School of Engineering, for approval; it may be submitted as early as the second semester of the freshman year and must be submitted before the beginning of the senior year. The proposal should include the student's reasons for pursuing the suggested program of study, and it must show how the proposed courses satisfy the following requirements:

- 1. The proposed program of study meets the general requirements for the B.S.E. degree but cannot be accommodated by the approved departmental

requirements in biomedical, civil, or electrical engineering, or mechanical engineering and materials science.

2. A program of at least eight engineering courses is included to provide depth in the chosen interdisciplinary area of study.
3. A program of at least four courses, in addition to the seventeen courses listed under general requirements, is included to provide breadth in technical areas (engineering, natural science, and mathematics).
4. The remaining courses, which are treated as electives, require the approval of the student's adviser.

Each student enrolled in an approved interdisciplinary program will be assigned to the appropriate engineering department for administrative purposes.

**Program in Engineering and Public Policy.** Engineering students may pursue a program of study leading to the degree of Bachelor of Science in Engineering, with a major in one of the five engineering fields of study and a second major in public policy studies. The program is sponsored by the School of Engineering and the Institute of Policy Sciences and Public Affairs. To qualify for a degree with this second major, a student must satisfy the series of courses, which may be characterized as electives within the engineering curriculum, that meet the requirements for the major in public policy studies. These requirements are a modified parallel of the requirements of the major in public policy studies as described in the course section, this bulletin.

**Residence Requirements.** At least sixteen semester-courses must be completed satisfactorily at Duke. This must include the work of the final two semesters, with the following exceptions: the student who has completed more than four full semesters of work at Duke may take the last two courses elsewhere; others may take the last course elsewhere. The courses taken elsewhere must be approved in advance by the student's major adviser and academic dean.

**Pass/Fail Grading Option.** With the consent of the instructor and the faculty adviser, an engineering student may choose to be graded on a pass/fail basis in up to four unrestricted electives or social sciences-humanities electives within the thirty-two course program. A student may take no more than one course on a pass/fail basis each semester.

**Continuation Requirements.** A student must achieve a satisfactory record of academic performance each semester and make satisfactory progress toward graduation to remain enrolled in the University.

A student must pass at least three courses in each semester, except for the first semester of the freshman year, in which at least two courses must be passed. A student who fails to meet this continuation requirement must leave the University for at least two semesters. A complete summer session may be counted as a semester. Following application for readmission, return must be approved by the Dean and the Director of Undergraduate Studies in the student's major department. If the student thereafter fails to pass three courses in a semester, permanent dismissal from the University usually results. A student who enrolls in more than four courses in a given semester and fails two or more of them will not be permitted to enroll for more than four courses in the following semester without approval of the Dean. In addition, a student may be dismissed temporarily or permanently for failing to make satisfactory progress toward graduation, including satisfactory progress toward fulfillment of curricular requirements within ten semesters.

The term *satisfactory progress* shall be defined also by the following schedule:

1. To begin enrollment in the second year, a student must have passed 6 s.c. and earned P, C-, or better in 3 s.c.

2. To begin enrollment in the third year, a student must have passed 13 s.c. and earned *P*, *C*-, or better in 9 s.c.
3. To begin enrollment in the fourth year, a student must have passed 20 s.c. and earned *P*, *C*-, or better in the 16 s.c.
4. To begin enrollment in the fifth year, a student must have passed 27 s.c. and earned *P*, *C*-, or better in 23 s.c.

**Grade Requirement for Graduation.** Of the thirty-two semester-courses which fulfill the specified categories in the B.S.E. degree requirements, twenty-eight or their equivalent in number must be passed with grades of *P*, *C*-, or better.

## The School of Nursing

The faculty and administration of the School of Nursing have accepted the following as the school's purposes:

1. To encourage students to pursue individual interests, broaden their perspectives of nursing, and influence changes toward holistic health services.
2. To promote conceptually oriented nursing practice.
3. To provide an environment for inquiry and the facilitation of opportunities for the application and generation of new knowledge for nursing practices.
4. To promote collegial collaboration among nurses and with others in relevant professions in the delivery of interdisciplinary health services.
5. To provide leadership for the profession of nursing at the local, state, regional, and national levels.
6. To provide programs for the pursuit of life-long learning and continued excellence in nursing practice.

The Duke University School of Nursing curriculum leading to a Bachelor of Science in Nursing degree provides a foundation for developing the knowledge, skills, and values characteristic of the liberally-educated person; for professional nursing practice; and for continuing professional growth and advanced education. Each component of the four-year curriculum is seen to provide a unique contribution to the objectives of the program. The undergraduate program is designed to assist the student to develop as a professional nurse who:

1. Comprehends the individual as a sociocultural, psychological, and biological system who has opportunities, responsibilities, and relationships within the environment.
2. Develops and uses knowledge, understandings, and skills essential to the process of nursing.
3. Incorporates into the self-system those values and behaviors that are consistent with professional nursing.
4. Uses knowledge of social, psychological, biological, and cultural factors influencing health.

Students are usually accepted as freshmen, but there are transfer spaces for students who have met the lower division requirement at Duke or elsewhere in accredited colleges and universities. A registered nurse student who meets lower division requirements and successfully challenges the nursing courses in the junior year may enter the senior courses.

The students are seen as assertive, active participants in making decisions about their own learning needs and interests. They are enabled and encouraged through the flexible curriculum to plan a program of study compatible with their backgrounds and interests which will contribute to their personal and professional goals. With the guidance of academic advisers, students may elect courses and experiences which best serve their interests for concentration in an area of study or



for exploration in several fields. Teaching methods take into consideration the spontaneity, potential, and individuality of the student.

The distinctive features of the undergraduate curriculum are:

1. The lower division with distributional requirements consists of courses in the humanities, the natural sciences, and social sciences as well as electives, including independent study, in nursing and other disciplines. Through courses comprising the upper division professional nursing component, opportunities are provided for the student to progress in uniting knowledge and decision making with nursing action toward individuals, groups, and families whether they be hospitalized or in the community.
2. The curriculum is oriented theoretically in the belief that students who learn to select facts and theories from relevant disciplines for application to nursing practice will be able to adapt readily to changing modalities of health care.
3. Nursing electives and independent study in the upper division allow the opportunity for students to pursue individual interests, to broaden their scope of nursing, and to gain a degree of proficiency in the type of initial professional practice in which they wish to engage after graduation.
4. A study abroad program in the lower division and/or in a required upper level nursing course is available. Opportunities for short-term study at sites remote from the Medical Center are available to all students, and opportunities for extensive study in remote sites are available to a moderate number of students.

In addition to the undergraduate program the school also seeks to fulfill the University's purposes of education, research, and services through the graduate program, and continuing education efforts.

**Program of Study.** For graduation with a Bachelor of Science in Nursing degree, a minimum of thirty-two semester-courses must be completed successfully. The courses are divided into lower and upper divisions, with thirteen upper division courses in nursing required for the nursing major.

**Lower Division**

Natural Science.....2 s.c.	May select from chemistry, botany, zoology, physics, geology, computer science, marine biology, or biology.*
Human Ecology .....2 s.c.	Nursing 97, 98
Statistics .....1 s.c.	Any introductory course offered by the School of Nursing or by the Departments of Mathematics, Psychology, or Economics.
Social Sciences .....3 s.c.	One course must be in psychology and the other two may be: a. one in psychology and one in sociology or anthropology b. two in sociology c. two in anthropology d. one in sociology and one in anthropology.
Humanities .....1 s.c.	No skill courses satisfy this requirement. (See information under Program I, this chapter.)

English Composition.....1 s.c.    English 1 (See the section on proficiency in English composition, this chapter.)

Electives .....6 or 7 s.c.

\*Students electing Biology 11 must enroll in Biology 12

Students must satisfy the small-group learning experience requirements during the first two years, as outlined in that section, this chapter.

Upper Division

Theoretic and Scientific Bases for Nursing Practice I .....	2 s.c.
Development of Nursing Skills and Attitudes I .....	4 s.c.
Theoretic and Scientific Bases for Nursing Practice II .....	2 s.c.
Development of Nursing Skills and Attitudes II .....	4 s.c.
Required Independent Study .....	1 s.c.
Electives (including optional independent study) .....	3 s.c.

A student desiring to complete requirements for a second major in a department of arts and sciences may do so and have both majors entered on the official record. (See the section on declaration of major or division in the chapter, Academic Procedures and Information.)

**Continuation Requirements.** A student must achieve a satisfactory record of academic performance each semester and make satisfactory progress toward graduation. A student who fails to meet the requirements outlined below must leave the University for at least two semesters. A summer may be counted as a semester. Following a student’s application for readmission, return must be approved by the Dean of the School of Nursing. A student who is readmitted after having withdrawn voluntarily or involuntarily for academic reasons must make no grade lower than C- during the first semester in order to continue in school.

*Satisfactory Performance Each Semester.* To remain in the School of Nursing, a student must not fail three or more courses in the first semester as a freshman or as a transfer student or fail two or more courses in any subsequent semester. An exception to this policy applies when a student fails a required nursing course worth two semester-courses.

*Satisfactory Progress Toward Graduation.* A student must pass in the approved nursing curriculum at Duke the following number of semester-courses (or the equivalent in half-courses or double-courses) to continue from one academic year to a subsequent year. (Summer terms at Duke or other approved institutions may be used to meet this requirement. See the chapter, Academic Procedures and Information.)

<i>To begin enrollment in the</i>	<i>a student must have passed</i>
second year	6 s.c.
third year	14 s.c.
fourth year	22 s.c.
fifth year	28 s.c.

Students are reminded that incomplete work in any course is counted as a failure to achieve satisfactory performance in that course. Such courses must be completed in time for final grades to be submitted to the registrar no later than the day preceding the opening of the spring semester or 15 June in the summer. In the case of incomplete work in the spring semester, this requirement applies whether or not the student plans to attend one or more terms of summer session.

Students excluded from the School of Nursing under the provisions of this regulation may, upon request, have their cases reviewed by the Undergraduate Studies Committee of the School of Nursing.

A minimum of fourteen courses must be passed before a student can proceed to the upper division professional curriculum. Twelve of these courses must have been passed with a grade of C- or better. All lower division requirements must be met before entry to the upper division.

**Requirements for Degree.** To be graduated, a student must pass a total of thirty-two courses (or equivalent combination of courses, half-courses, and double-courses), including courses in the approved curriculum. Fourteen courses must be passed at the advanced level. Of the thirty-two courses required for graduation, no more than two courses with *D* grades will be accepted. Only required nursing courses with a grade of C- or better will be accepted toward graduation. It is required that for graduation the student have an overall C average or better in nursing courses and that all financial obligations to the University be satisfied.

**Residence Requirements.** The requirements for the normal and maximum periods of residence for students enrolled in the School of Nursing are the same as those in Trinity College of Arts and Sciences. However, the minimum time that any student may spend in residence (full-time study) at Duke before receiving a Bachelor of Science in Nursing degree is one year if the student is a registered nurse completing the requirements for a B.S.N. For these students full-time or part-time study is possible.

**Withdrawal from the School of Nursing.** Students who wish to withdraw from the School of Nursing must give official notification to the Dean of the School of Nursing. For students withdrawing on their own initiative prior to four weeks before the end of the semester, a *W* is assigned instead of a regular grade for each course. Thereafter, an *F* is recorded for each course unless withdrawal is caused by any emergency beyond the control of the student.

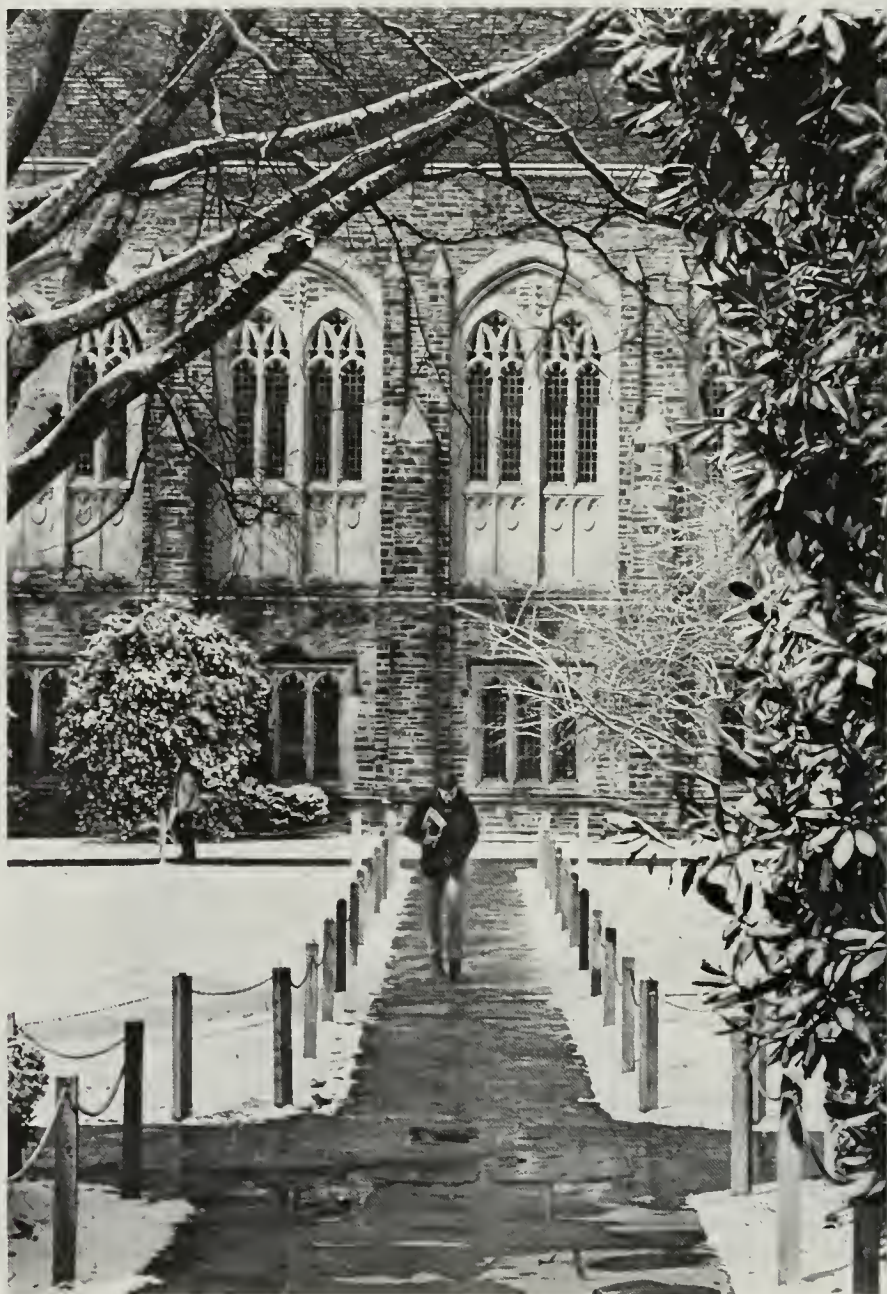
**Transportation Required.** The use of facilities other than Duke and Durham Veterans Administration Hospitals requires transportation. It is the responsibility of each nursing student to provide a means of transportation to and from the facilities selected for learning experiences in both the junior and senior years. Although a few agencies may be within bicycling distance, most are not.

**Accreditation.** In addition to the accreditation status accorded the University, the undergraduate program of the School of Nursing is accredited by the National League for Nursing and the North Carolina Board of Nursing.





# Academic Procedures and Information





## Advanced Placement

Scores on the tests discussed below and documented previous educational experience are the criteria used to determine a student's qualifications for certain advanced courses.

**CEEB Advanced Placement Program (APP) Examinations.** A score of 3, 4, or 5 on CEEB Advanced Placement Program Examinations is the basis for consideration for credit and placement in advanced courses in art, botany, chemistry, English,\* French, German, history, Latin, mathematics, music, physics, Spanish, and zoology. The record of a student presenting such a score and desiring to continue in the same subject at Duke will be evaluated for credit and for placement in an advanced course. In the case of French, German, Latin, and Spanish, APP scores of 3, 4, or 5 may result in placement in courses at the 100-level; approval of the Director of Undergraduate Studies or Supervisor of Freshman Instruction in the appropriate department is required before final placement is made. Credit may be granted for one or two courses in each subject area, with the approval of the academic department concerned. A student who has earned a score of 3 must complete a specified course in that subject at Duke with a grade of C or better before credit is awarded. Pass/fail grading is *not* an option for such courses. Ordinarily, the validating course must be completed by the end of the sophomore year.

**CEEB Achievement Tests.** Scores on CEEB Achievement Tests are the basic criteria for placement in French, German, Italian, Spanish, Latin, and mathematics, and students who present a score of 700 or higher on the CEEB English Composition Achievement Test are excused from the course in English composition required for graduation. Course credit, however, is not given for courses bypassed. The following tables will assist students in making reasonable course selections in the subjects indicated.

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\*These scores, although qualifying a student for advanced courses in literature, do not satisfy the requirement in composition. See the section on CEEB Achievement Tests.

French‡		German		Italian	
CEEB Achievement Scores	Course Placement	CEEB Achievement Scores	Course Placement	CEEB Achievement Scores	Course Placement
200–390	French 1–2	200–360	German 1*	200–390	Italian 1–2
400–490	French 63	370–560	German 63	400–500	Italian 63
500–550	French 74, 76	570 plus	Third year†	510–550	Italian 74, 76
560 plus	French 100–level course			560 plus	Italian 100–level course**

Spanish†		Latin		Mathematics	
CEEB Achievement Scores	Course Placement	CEEB Achievement Scores	Course Placement	CEEB Achievement Scores	Course Placement
				Less than	
200–450	Spanish 1–2	200–520	Latin 1*	530	Math. 19
460–550	Spanish 63	530–630	Latin 63	530–800	Math. 31
560–600	Spanish 74, 76	640 plus	Third year†	760–800	Math. 31X, upon request of the student
610 plus	Spanish 100–level course**			600–800	Math. 33

\*The first year of a language may *not* be taken for credit by a student who has completed more than two years of that language in secondary school. In rare cases, an exception may be granted with permission of the Director of Undergraduate Studies in the appropriate department.

\*\*French 123 and Spanish 110 are not open to first semester freshmen with a score of less than 70.

†An exception may be granted in consultation with the Director of Undergraduate Studies

‡In these languages students are permitted to drop back one level without loss of credit (e.g., from 101 to 74 or from 74 to 63). No credit will be allowed for courses two levels below the achievement score (e.g., students with a score of 610 in French or Spanish could not receive credit for 63, but could for 74 or 76). In no case will credit be given for 1–2 to students with three or more years of high school French or Spanish.

**CEEB College Placement Tests.** The CEEB Placement Tests in French, German, Italian, Latin, and Spanish should be taken during orientation by (1) those students who desire to continue in the language but have not taken the CEEB Achievement Test, and (2) those students who, having taken the CEEB Achievement Test, wish to challenge the score for the purpose of qualifying for a higher level language course. These tests are also administered at the end of each semester and at the close of the first term of the summer session for the convenience of those students who wish to demonstrate their foreign language proficiency by this means.

All freshmen who plan to take mathematics during their first semester at Duke, and who do not submit the CEEB SAT score or CEEB Achievement Test score in mathematics, must take the CEEB College Placement Test in mathematics during orientation. Students who have been placed in Mathematics 19 or 31 but believe that their background in mathematics justifies a higher course placement

need not take the CEEB College Placement Test, but they should consult the Director of Undergraduate Studies or Supervisor of Freshman Instruction in the Department of Mathematics.

Course credit is not given for courses bypassed on the basis of the placement tests.

**Placement in Russian.** Students who wish to continue in Russian at Duke should see the Director of Undergraduate Studies in the Department of Slavic Languages and Literatures. In the case of Russian, neither CEEB Achievement Test scores nor CEEB College Placement Test scores have been validated sufficiently to serve as criteria for placement. Therefore, the department offers an examination which is used in conjunction with other criteria for placing students at the appropriate course level.

**Reading Out of Introductory Courses.** Students demonstrating academic ability may be granted the option of reading out of an introductory or prerequisite



course in order to allow them to advance at their own pace to upper-level work. No course credit may be earned by reading out. Reading for a course and auditing are mutually exclusive procedures. Students must be recommended for the reading option by their academic deans, and their proposed programs of reading must be approved by the appropriate Director of Undergraduate Studies. Students may be certified for advanced course work by passing a qualifying examination prepared by the department. When an advanced course is completed, an entry is made on the permanent record that the qualifying examination was passed, but no course credit is awarded. Further information is available from academic deans.

**Placement in Nursing.** Registered nurses wishing to complete requirements for the Bachelor of Science in Nursing degree or students wishing to transfer nursing courses from other schools of nursing should see the Director of Academic Programs of the School of Nursing. Examinations and other criteria are used to determine appropriate placement in the approved curriculum.

**Transfer Credit.** Credit of up to sixteen semester-courses may be granted for course work satisfactorily completed by students transferring from other accredited, degree-granting institutions. Courses in which grades of less than C- have been earned are not accepted for transfer credit. The semester-course unit of credit awarded at Duke for satisfactorily completed courses cannot, of course, be directly equated with semester-hour or quarter-hour credits. Ordinarily, transfer students will not be awarded more than four semester-course credits for one semester's work unless they have satisfactorily completed more than the normal course load at the institutions from which they have transferred. All courses approved for transfer are listed on the student's permanent record at Duke, but grades earned are not recorded.

Courses taken at other institutions are evaluated by the University registrar and faculty. Credit for courses in science, mathematics, and foreign language taken at a junior college may be evaluated by the Duke departments concerned; this is also true for some courses that have no Duke equivalents. At least half the courses submitted toward fulfillment of a student's major field must be taken at Duke. Departments may make exceptions to this rule in special circumstances.

No credit is given for work completed by correspondence. Credit for not more than two semester-courses is allowed for extension courses. (See the section on limitation on work done elsewhere, this chapter.)

## Advising

Students and their advisers confer when necessary, but they should confer before every registration period to review goals, plans for achieving them, and any problems encountered or anticipated. Before declaring a major in Trinity College, students confer with the freshman adviser, freshman dean, or the academic dean in the division of their interests. Upon declaring a major, the student is assigned a departmental adviser. The academic dean for that division is also available for consultation. In the School of Engineering and the School of Nursing, the adviser's signature is necessary for registration and all course changes. At times, advising is informal and occurs in conversation with members of the faculty.

## Registration

Students are expected to register at specified times for each successive semester. Prior to registration each student receives special instructions and registration materials. Students prepare a course program and present it at an appointed time to their advisers for review. The approved schedule is then



presented at registration. In the School of Engineering and the School of Nursing, the schedule must be signed by the adviser. Trinity College students who are eligible to be graduated in the following year (May, September, or December) must complete and file with the college recorder a diploma card before registering for the spring semester.

Students who expect to teach in elementary or secondary schools should consult an adviser in the Department of Education prior to each registration period to ensure that they are meeting requirements for state certification and that they will have places reserved for them in the student teaching program.

Those who register late are subject to a \$25 fine. Students who fail to register are withdrawn and must apply for readmission if they wish to return; they also forfeit their \$50 registration deposits unless they indicate at the time of registration their intention not to continue in the University the following semester.

**Semester Opening.** Students are expected to report to a designated office at the beginning of each semester to obtain a semester enrollment card. Students who are unable to do so should notify their academic deans of their late arrival. Failure to report, or to account beforehand for an absence, entails a loss of registration in courses. Official enrollment is required for admission to any class.

**Course Changes After Classes Begin.** During the drop/add period changes may be made in course schedules. Course changes initiated by the student may be made free of charge during the first five days of the semester. During the remainder of the drop/add period, each course change initiated by the student entails a fee of \$1.50 per change. Students are reminded that it is their responsibility to be certain that their course load conforms with the academic requirements.

In Trinity College of Arts and Sciences, students may drop and add courses during the first week of classes at their own discretion. During the second week of the drop/add period they may drop courses at their own discretion, but the signature of the appropriate instructor is required for adding a course. After the drop/add period no course may be added; and to withdraw from a course, students must obtain permission from their Deans. Factors to be considered by the Dean include health, necessary outside work, and, up to the time mid-term grades are issued, a course overload. Ordinarily, courses may not be discontinued after mid-semester. In addition, the instructor of the course from which the student withdraws must certify the student's standing in the course as satisfactory or as failing. In the former case a *WP* will be entered on the permanent record and in the latter, a *WF*. Course work discontinued without approval will ordinarily result in a grade of *F*.

Within the School of Engineering and the School of Nursing, the signature of the adviser is necessary for dropping or adding courses after classes begin. After the drop/add period no course may be added, and in order to withdraw from a course students must obtain permission from their academic deans. Factors to be considered by the Dean include health, necessary outside work, and, up to the time mid-term grades are issued, a course overload. Until the last four weeks of classes in the semester, the instructor must certify the student's standing in the course as satisfactory or as failing. In the former case a *WP* will be entered on the permanent record and in the latter, a *WF*. During the last four weeks of classes in any semester, or the equivalent in the summer terms, *W* will be assigned if, in the judgment of the student's Dean, compelling and extraordinary circumstances make it necessary for the student to drop the course; otherwise, the course must be continued to the end of the semester. A course discontinued without approval will result in a grade of *F*.



## Course Load and Eligibility for Courses

The normal and expected course load each semester is four semester-courses. To take fewer than four or more than five semester-courses in any semester, students must have the approval of their academic deans. No student, however, may take more than six courses in any semester. With the approval of their academic advisers, seniors in the School of Nursing who need fewer than eight semester-courses may take a three-course load either semester; seniors in Trinity College and the School of Engineering need permission of the appropriate academic deans.

Self-pacing during a given calendar year (two regular semesters plus three Duke summer terms) is also possible with the approval of the student's academic dean and faculty adviser (and in consultation with the Office of Undergraduate Financial Aid, if the student is receiving monetary support from the University). A student may apply to take fewer than four courses for one or more semesters in a given calendar year after the freshman year. In every case, however, a student must meet the minimum requirements for semester-to-semester continuation at Duke, as well as those requirements that apply at the end of each calendar year. Advanced placement credits and summer work taken elsewhere are excluded when minimum requirements are considered under this plan.

The rules established by the Graduate School provide that juniors and well-qualified sophomores may enroll in a 200-level (senior-graduate) course if they have obtained written consent of the instructor, as well as that of the Director of Graduate Studies in the department concerned. Within the School of Nursing, 200-level courses are open to nursing seniors and nursing graduate students. Non-nursing students may enroll only with the permission of the instructor. Undergraduate students may not enroll in 300- or 400-level courses. In Trinity College no course may be repeated for credit or a grade if a passing grade has been earned previously, except where noted in the course description. A course previously passed, however, may be audited.

Seniors who, at the beginning of a semester, lack no more than three semester-courses toward the fulfillment of the requirements for the Bachelor of Arts or Bachelor of Science degree may enroll in graduate courses, for a maximum course load of five semester-courses. The permission of the Dean of the Graduate School is required, and admission to the Graduate School is necessary.

## Course Audit

With the written consent of the instructor, a full-time degree student is allowed to audit one or more courses in addition to the normal program. A part-time degree student may audit courses by payment of \$40 for each course audited. After the drop/add period in any semester, no student classified as an auditor in a particular course may take the course for credit, and no student taking a course for credit may be reclassified as an auditor. A student may not repeat for credit any course previously audited. Auditors submit no daily work, take no examinations, and receive no credit for courses.

Faculty members, employees of at least one year of continuous service, husbands or wives of these persons, and alumni may audit courses without enrolling concurrently in another course. Formal application is not necessary: written permission from the instructor must be obtained and a course card must be signed by the Director of the Office of Continuing Education. Consult the chapter, Financial Information, for the appropriate fee schedule. Auditors must register on the Friday before classes begin on Monday for each semester.

## Independent Study

Independent study enables a student to pursue individual research and reading in a field of special interest under the supervision of a member of the faculty. A student—with the approval of an adviser, the instructor, and the Director of Undergraduate Studies in the instructor's department—may enroll in independent study for any semester at Duke. In the School of Nursing, students must have the approval of their academic advisers, faculty sponsors, and the coordinator for independent study. Such studies may have a clinical or field component.

## House Courses

House courses are initiated and organized by students within given residential units. They are generally, but not necessarily, interdisciplinary. If students are to earn credit for a course, it must be sponsored by a faculty member in the arts and sciences, reviewed by the department of that faculty member, and approved by the Committee on Courses of the Undergraduate Faculty Council of Arts and Sciences. In the School of Nursing, house courses are initiated and organized by students and faculty. Each house course must be approved by the Undergraduate Studies Committee and the School of Nursing faculty. House courses may carry half-course credit. They do not fulfill distributional requirements, and not more than two semester-course credits earned in house courses may be counted toward the course requirements for graduation. Grades are submitted on a pass/fail basis. The Secretary of the Committee on Courses can provide further details for Trinity College courses.

## Declaration of Major or Division in Trinity College of Arts and Sciences

Each freshman must declare a division of interest (humanities, social sciences, or natural sciences), or a major, if desired, by registration in April of the freshman year, and all students must declare a major before the third week of the fourth semester. When a student declares a major, the second and third divisions must also be identified. The form for declaring a major or division is available from the Registrar's office; it is provided to freshmen with registration materials in the spring semester. The second major should be declared in the Office of the Registrar before the student registers for the final semester.

A change of departmental major or interdepartmental concentration must also be registered with the Office of the Registrar. After declaring a major, a student is assigned an adviser in the department of the major and an academic dean in the division of concentration. Freshmen who declare a division rather than a major are advised by the appropriate academic dean.

A student may declare an interdepartmental concentration after conferring with the Directors of Undergraduate Studies of the departments involved, and they or other advisers assist the student in preparing a program of course work. The program must consist of at least three courses beyond the introductory level in each of the departments. An interdepartmental concentration must be planned early in the undergraduate career. One of the departments should be identified as primarily responsible for the student's advising. A copy of the plan for the program, with a descriptive title which will appear on the student's permanent record, should be presented, along with the written approval of the Directors of Undergraduate Studies, to the appropriate academic dean. A student who declares

an interdepartmental concentration must identify the second and third divisions and satisfy those requirements and all others for Program I.

A student may have a second major recorded on the permanent record, providing the second major is offered within the degree to be granted for completion of the first major. Majors offered within each degree are listed below:

*Bachelor of Arts.* Anthropology, art design, art history, Afro-American studies, botany, chemistry, classical studies (ancient history and archaeology), comparative area studies, comparative literature, drama, economics, elementary education, English, French, geology, Germanic languages and literature, Greek, history, Latin, management science, mathematics, medieval and Renaissance studies, music, philosophy, physics, political science, psychology, public policy studies, religion, science education, Slavic languages and literatures, sociology, Spanish, zoology.

*Bachelor of Science.* Botany, chemistry, computer science, science education, geology, physics, psychology, zoology.

## **Class Attendance and Excused Absences**

Responsibility for class attendance rests with the individual student. Since regular and punctual class attendance is expected, the student must accept the consequences of failure to attend. Instructors may refer to the student's academic dean a student who is, in their opinion, absent excessively. As a rule, absences from required classes and tests are excused only for illnesses certified by a medical official of the University or for authorized representation of the University in out-of-town events. Officials in charge of groups representing the University are required to submit the names of students to be excused to the appropriate Deans' offices forty-eight hours before absences are to begin.

## **Final Examinations and Excused Absences**

Unless departmental policy stipulates otherwise, the form of the final exercise is determined by the instructor. However, a final written examination may not exceed three hours in length and a final take-home examination may not require more than three hours in the actual writing. Take-home examinations are due at the regularly scheduled hour of an examination, based on the time period of the class. The times and places of final examinations are officially scheduled by the University Schedule Committee, generally according to the day and hour of the regular course meeting. Changes may not be made in the schedule without the approval of the committee. No later than the end of the first week of classes of each semester, the instructor is required to announce plans for the final examination exercise. In courses where final examinations are not scheduled, hour exams may not be given in the last week of classes.

If a student is absent from a final examination, an X is given instead of a final grade. An acceptable explanation for the absence must be presented to the appropriate academic dean within forty-eight hours after the scheduled time of the examination, or the X is converted to an F. If the absence is excused by a Dean, the student arranges with the Dean and the instructor for a make-up examination to be given at the earliest possible time. An X not cleared by the end of the semester following the examination not taken is converted to an F. A student not enrolled in the University during that following semester has until the end of the next semester of enrollment to clear the X.



## Grading and Grade Requirements

Final grades on academic work are sent to students after the examinations at the end of the fall semester. At the close of the spring semester, grades are mailed to the student's home address. Mid-semester advisory grade reports for freshmen are issued each semester.

**Passing Grades.** Passing grades are *A*, exceptional; *B*, superior; *C*, satisfactory; *P*, passing (see pass/fail option below); and *D*, low pass. These grades may be modified by a plus or minus. A *Z* may be assigned for the satisfactory completion of the first semester of a two-course sequence, and the final grade for both courses is assigned at the end of the second course of the sequence.

Although the *D* grade represents low pass, in Trinity College not more than two courses passed with *D* grades may be counted among those required for year-to-year continuation or among the thirty-two courses required for graduation. Courses for which a *D* grade is earned, however, satisfy distributional requirements, as well as requirements in the major, in English composition, and in small-group experiences. Trinity College students may not repeat for credit any course in which a *D* grade or higher was earned.

**Failing Grades.** A grade of *F* or *U* (see pass/fail option below) indicates that the student has failed the course. The grade is recorded on the student's record. If the student registers for the course again, a second entry of the course and the new grade earned are made on the record, but the first entry is not removed.

**Pass/Fail Option.** With the consent of the instructor and faculty adviser, a student who has declared a major may choose to be graded on a pass/fail basis in one elective, nonmajor course each semester or summer term. In addition, with the consent of the instructor, adviser, and Director of Undergraduate Studies, a student may take for pass/fail credit courses in independent study or internship in any department including that of the major. Certain courses are offered only on a pass/fail basis. Unless a course is offered only on a pass/fail basis, a course passed under the pass/fail option does not satisfy distributional requirements.

After the drop/add period in any semester, no changes from pass/fail to regular status, or from regular to pass/fail status, are permitted in any course. A *P* may not be converted subsequently to a regular letter grade, and the course may not be retaken for credit.

**Grades When Absent from Final Examination.** (See Final Examination and Excused Absences, this chapter.)

**Grades for Incomplete Work.** (See *Student Request for Assignment of a Temporary Incomplete*, in the chapter, Degree Programs.) expected to complete all courses before graduation. If a student whose work is incomplete is also absent from the final examination, an *X* is assigned for the course. For the purposes of determining whether a student satisfies continuation requirements, an *I* is counted as failing to achieve satisfactory performance in that course.

## Commencement

Graduation exercises are held once a year in May when degrees are conferred on and diplomas are issued to those who have completed degree requirements by the end of the spring semester. Those who complete the requirements by the end of the fall semester or by the end of a summer term receive diplomas dated 30 December or 1 September, respectively. There is a delay of about one month in the mailing of September and December diplomas because diplomas cannot be issued until they are approved by the Academic Council and the Board of Trustees.

## Academic Honors

To determine eligibility for academic honors, only grades earned at Duke are used in calculating the average.

**Dean's List.** In recognition of superior academic achievement, freshmen, sophomores, and juniors who carry a normal academic load and earn a *B* average or higher in the two semesters of an academic year are placed on the Dean's List if the following additional requirements are met:

1. Grades other than *P* have been earned in six semester-courses.
2. No incomplete or failing grade has been received during the academic year.

**Class Honors.** Students in the freshman, sophomore, or junior class who carry a normal academic load and earn a *B+* average on all work for the year are eligible for class honors provided the following conditions are also met:

1. Grades other than *P* have been earned in six semester-courses.
2. No incomplete or failing grade has been received during the academic year.

**Graduation Honors.** Students who earn the following averages for all work taken at Duke are graduated with honors: *B* average, *cum laude*; *B+* average, *magna cum laude*; and *A-* or above, *summa cum laude*.

**Graduation with Distinction.** Most of the academic departments have programs for graduation with distinction for students in Programs I and II and in all nursing and engineering programs. To be eligible for this honor, students in Programs I and II and in engineering programs must show promise of achieving, by the time of graduation, at least a *B* average in the major field. Departments or interdepartmental honors committees may invite a student at the end of the sophomore or junior year to enter the Graduation with Distinction Program. After participation in a seminar in the junior or senior year, and/or a directed course of reading, laboratory research, or other independent study, the student must present the results of individual research and study in a distinguished piece of writing. The student's achievement, including the paper, is assessed by a faculty committee, and if the student has at least a *B* average in the major field, the committee may recommend that the student be graduated with distinction in the major field. A student engaged in an interdisciplinary program must attain an overall *B* average for courses taken in the departmental area of concentration or special study. Achievement is assessed by an interdepartmental honors committee established by the Directors of Undergraduate Studies in the departments concerned. Interested students should consult the appropriate Directors of Undergraduate Studies.

In the School of Nursing, graduation with distinction allows the capable student to develop critical thinking, and to develop or expand knowledge in the study of a nursing problem with faculty guidance and with public recognition for demonstrated mastery. The student must have a *B+* average in all nursing courses at the beginning of the senior year and at the end of the senior year to be eligible for graduation with distinction. For more information about graduation with distinction, students should contact the coordinator for the honors program in the School of Nursing.

**Other Honors.** Elections to the freshman honorary society, Phi Eta Sigma, of students who earn a 3.5 average in a program of four or more semester-courses each semester, are made at the end of the first semester and also at the end of the freshman year.

Elections to the national honorary society, Phi Beta Kappa, are held in the fall and spring; seniors are elected at both times, and juniors are elected in the spring only. Additional elections, chiefly of transfer students and doctoral students, are held in the fall following the student's graduation or the awarding of the Ph.D.



degree. Eligibility for election is determined not by the University, but by the local chapter of the society, and is based on good character and superior academic achievement. Seniors are usually considered after the completion of six or seven semesters of work, or the equivalent. No fewer than four-fifths of the student's work must have been taken on the regular grading system (A-F) at Duke. At least two semester courses in history, literature, or philosophy covering a period primarily before the twentieth century must have been satisfactorily completed. Juniors are considered after the completion of five semesters of exceptionally meritorious work. The total number elected usually does not exceed 8 percent of the graduating class. Inquiries may be directed to: Secretary of Phi Beta Kappa, Box 4795, Duke Station, Durham, North Carolina 27706.

Elections to the national engineering honorary society, Tau Beta Pi, are held in the fall and spring. Eligibility is determined on the basis of distinguished scholarship and exemplary character. Engineering students whose academic standing is in the upper eighth of the junior class or the upper fifth of the senior class have earned consideration by their local chapter. Inquiries may be directed to: Advisory Board, Tau Beta Pi, School of Engineering, Duke University, Durham, North Carolina 27706.

Election to the national nursing honorary society, Sigma Theta Tau, is made in the spring. Both juniors and seniors in the School of Nursing and outstanding members of the profession are elected at this time. Eligibility is determined on the basis of scholarship (students must have a *B* average), leadership, variety of outside activities, interest in nursing, and potential for excellence in the profession. Inquiries may be directed to: Sigma Theta Tau, Duke University School of Nursing, Durham, North Carolina 27710.

Several prestigious fellowships for graduate study are awarded. Interested students should consult the academic dean in charge of fellowships, 105 Allen Building.

## Prizes and Awards

The achievements of undergraduate students are recognized in various fields of activity. The following prizes suggest the range of recognition.

**The Robert E. Lee Prize.** This prize is the gift of the late Reverend A. W. Plyler, of the Class of 1892, and Mrs. Plyler. The sum of \$50 is awarded annually at commencement to the person in the senior class of Trinity College of Arts and Sciences or the School of Engineering who, in character and conduct, scholarship, athletic achievement, and capacity for leadership, has personified most nearly the standards of the ideal student.

**Julia Dale Prize in Mathematics.** This is an annual prize of at least \$50. The winner is selected by the Department of Mathematics on the basis of excellence in mathematics. In some years first and second prizes are given.

**The Henry Schuman Music Prize.** A prize of \$100 is awarded annually to an undergraduate of Duke University for an original composition of chamber music or a distinguished paper in music history or analysis. The award is sponsored by the Department of Music through a continuing gift from Dr. and Mrs. James H. Semans who named the prize after Henry Schuman, a life-long friend of the Semans and Trent families, a talented amateur violinist, and one who helped to build valued collections in the Duke library.

**The Phi Lambda Upsilon Prize.** Phi Lambda Upsilon, the honorary chemical society, annually awards a prize of \$20 to the junior chemistry major (A.B. or B.S.)

having the highest overall academic average. The recipient's name is inscribed on a plaque displayed in the Chemistry Library.

**The Chemistry Department Award.** This prize is awarded annually to an outstanding chemistry major, usually receiving a B.S. degree. The basis for selection is the student's independent research and interest in pursuing advanced work in chemistry. The prize is a one-year subscription to an appropriate journal.

**The Merck Index Award.** This prize is awarded annually, normally to one or two graduating chemistry majors intending to pursue a career in medicine. Selection, by a faculty committee, is based on scholastic excellence. The prize consists of a copy of the Merck Index.

**The James B. Rast Memorial Award in Comparative Anatomy.** The parents of James Brailsford Rast, a member of the Class of 1958 of Duke University, endowed this award in his memory. The award, consisting of the *Atlas of Descriptive Human Anatomy* by Sobotta and bearing the James B. Rast Memorial bookplate, is given annually to the student who demonstrates the greatest achievement in the study of comparative anatomy.

**The Winfred Quinton Holton Prize in Primary Education.** This prize was established in 1922 by gifts of Holland Holton, Class of 1907, and Mrs. Lela Young Holton, Class of 1907, in memory of their son, Winfred Quinton Holton, with the income to be used to provide a prize for investigative work in primary education. This prize of approximately \$175 may be made annually. Competition is open to Duke seniors and graduate students who are candidates for a degree in elementary education. A student who wishes to be considered for the prize must submit a paper to be judged by a faculty committee in the Department of Education. The student must have a faculty supervisor, and only scholarly papers which the student and faculty supervisor deem appropriate for publication should be submitted. Papers must be submitted by 1 April for consideration in a particular year.

**The Anne Flexner Memorial Award in Creative Writing.** This award has been established by the family and friends of Anne Flexner, who was graduated from Duke in 1945. It consists of \$200 (first prize), \$100 (second prize), and \$50 (third prize). The awards are given annually for the best pieces of creative writing submitted by Duke undergraduates. The competition is limited to short stories (7,500-word limit), one-act plays (7,500-word limit), poetry (100-line limit), and informal essays (5,000-word limit). Only one manuscript may be submitted by a candidate, and it must be delivered to the Department of English, 325 Allen Building, by 15 March.

**The Ann Barbour Stow Memorial Award.** This award has been established by the family and friends of Ann Barbour Stow, who graduated from Duke in 1963 with a major in English. The stipend, approximately \$500, is awarded, usually during the senior year, to an undergraduate English major who best fulfills those qualities which the late Ann Stow represented.

**The David Taggart Clark Prize in Classical Studies.** This prize is awarded to the senior major in Greek, Latin, or classical studies who is judged to have written the best honors essay of the year.

**The William Senhauser Prize.** Given by the mother of William Senhauser in memory of her son, a member of the Class of 1942, who gave his life in the Pacific theater of war on 4 August 1944, this award is made annually to the student in Trinity College of Arts and Sciences or the School of Engineering who has made the greatest contribution to the University through participation and leadership in

intramural sports. The winner of this prize is chosen by a committee appointed by the President of the University.

**The Roger Alan Opel Memorial Scholarship.** The grant of \$500 is awarded annually to a Duke student who will spend a year of undergraduate study at a British university. The student is selected on the basis of intellectual curiosity, academic ability, and financial need. The award was established by the parents of Roger Alan Opel, a senior at Duke University who was killed in November 1971.

**The William T. Laprade Prize in History.** This prize is offered in honor of William T. Laprade, who was a member of the Department of History at Trinity College and Duke University from 1909 to 1953, and Chairman of the department from 1938 to 1952. It is awarded to a senior who is being graduated with distinction and whose senior essay in history has been judged to be unusually meritorious.

**The Edward C. Horn Memorial Prize for Excellence in Zoology.** Given each year to the graduating zoology major who has shown, in the opinion of the zoology faculty, the highest level of academic achievement and promise, this prize is offered in memory of Professor Edward C. Horn. It is a tribute to his warm regard for students and faculty and his appreciation of scholarly excellence. The prize consists of books appropriate to the student's field of interest.

**The James H. Oliver Memorial Award.** This award was established in 1963 by the family of James H. Oliver and is given to the student or students who have done the most to further the interest of music at Duke University. A prize of up to \$150 is awarded annually.

**Robert S. Rankin Political Science Award.** An annual award of \$100 is given to the most outstanding student in the field of American government and constitutional law. The funds are donated in memory of Professor Rankin by Judge Jerry B. Stone, A.B. '44, J.D. '48.

**N. Joseph Rahall Political Science Award.** An annual award of \$100, contributed by Mr. Rahall, A.B. '35, is to be awarded for the best paper submitted by an undergraduate major in political science.

**The Karl E. Zener Award for Outstanding Performance of an Undergraduate Major in Psychology.** The Karl E. Zener Award will be given annually to an undergraduate psychology major at Duke University who has shown outstanding performance and scholarship. The award will be based on the student's total grade record, plus a paper submitted to the award committee. The award will consist of a monetary prize from the income of the fund and inclusion by name on a memorial plaque in the Sociology-Psychology Building.

**The Richard L. Predmore Award in Spanish.** Given each year to an outstanding Spanish major in honor of Richard L. Predmore, Professor of Spanish at Duke University from 1950-1978 and Dean of the Graduate School from 1962-1969.

**The Tau Beta Pi Prize.** This prize is awarded each year by the North Carolina Gamma Chapter of Tau Beta Pi, the engineering national honor society, to a sophomore student in engineering for outstanding scholastic achievement during the freshman year.

**The Walter J. Seeley Scholastic Award.** This award is presented annually by the Engineers' Student Government to that member of the graduating class of the school who has achieved the highest scholastic average in all subjects, and who has shown diligence in pursuit of an engineering education. The award was initiated to honor the spirit of academic excellence and professional diligence demonstrated by



the late Dean Emeritus Walter J. Seeley. It is hoped that this award will serve as a symbol of the man and the ideals for which he stood. The name of the recipient is inscribed on a plaque displayed in the Engineering Building.

**The American Society of Civil Engineers Prize.** The prize is awarded annually by the North Carolina Chapter of the American Society of Civil Engineers to two outstanding civil engineering seniors, upon recommendation of the faculty of the civil engineering department. The basis for selection is the student's scholastic record, contribution to the student chapter, and participation in other college activities and organizations. The prize consists of a certificate of award and the payment of one year's dues in the American Society of Civil Engineers.

**The George Sherrerd III Memorial Award in Electrical Engineering.** This award is presented annually to the senior in electrical engineering who, in the opinion of the electrical engineering faculty, has attained the highest level of scholastic achievement in all subjects and has rendered significant service to the School of Engineering and the University at large. The award was established in 1958 by the parents of George Sherrerd III, a graduate of the Class of 1955, to recognize outstanding undergraduate scholarship. Recipients receive a monetary award, and their names are inscribed on a plaque displayed in the Engineering Building.

**The Charles Ernest Seager Memorial Award.** This award recognizes outstanding achievement in the annual Student Prize Paper Contest of the Duke branch of the Institute of Electrical and Electronics Engineers or significant contributions to electrical engineering. The award, established in 1958 by the widow and friends of Charles Ernest Seager, a graduate of the Class of 1955, consists of inscribing the name of the contest winner on a plaque displayed in the Engineering Building.

**The Milmow Prize.** This prize is awarded annually to students from North or South Carolina graduating in the Department of Electrical Engineering, who, in the opinion of the faculty of that department, and, as shown by their grades, have made the most progress in electrical engineering during the last year in school. The prize consists of a certificate of award and one year's payment of dues in the Institute of Electrical and Electronics Engineers for the membership year in which the honoree is awarded the baccalaureate degree.

**The Raymond C. Gaugler Award in Materials Science and Engineering.** This award is presented annually to the senior who has made the most progress at Duke in developing competence in materials science or materials engineering. The basis for selection is the student's scholastic record, research, or design projects completed at Duke, and interest in a materials-related career. The award has been established by Patricia S. Pearsall in memory of her grandfather, Raymond C. Gaugler, who was President of the American Cyanamid Company prior to his death in 1952.

**The American Society of Mechanical Engineers Award.** This award is presented annually to a senior in mechanical engineering for outstanding efforts and accomplishments in behalf of the American Society of Mechanical Engineers Student Section at Duke. The award consists of a certificate of recognition.

**The School of Engineering Student Service Award.** This award, established in 1978, is given to those graduating seniors who, by their contributions of time, effort, and spirit, have significantly benefited the community of the School of Engineering. The names of the recipients are inscribed on a plaque displayed in the Engineering Building.

**The Theodore C. Heyward Award.** This award is presented annually to an outstanding senior in mechanical engineering at Duke University. The recipient is chosen by a committee of the mechanical engineering faculty and selection is based on academic excellence, engineering ability, and leadership. The recipient receives a monetary award and his or her name is inscribed on a plaque displayed in the Engineering Building.

**The William Brewster Snow Award in Environmental Engineering.** This award is presented to an outstanding senior in civil engineering who, through superior academic achievement and extracurricular activities, has demonstrated interest and commitment to environmental engineering as a career. Selection of the recipient is made by the civil engineering faculty. The recipient is presented with an inscribed plaque and his or her name is also inscribed on a plaque permanently displayed in the Engineering Building.

**The Otto Meier, Jr. Tau Beta Pi Award.** This award was established in recognition of Dr. Meier's leadership in establishing the North Carolina Gamma Chapter in 1948 and his continuous service as chapter adviser until 1975. This award is given annually to the graduating Tau Beta Pi member who symbolizes best the distinguished scholarship and exemplary character required for membership. The name of the recipient is inscribed on a plaque displayed in the Engineering Building.

**Aaronson Scholarship Award.** Established by Dr. Pauline Gratz in memory of her husband, Sidney Aaronson, this award is presented annually to the graduating nursing student who, having been admitted to the Duke University School of Nursing as a freshman and having completed all requirements for the Bachelor of Science in Nursing degree at Duke University, holds the highest scholarship achievement in the graduating class on the basis of a cumulative quality point ratio. The award consists of a certificate of recognition and a cash award of \$100.

**The Moseley Award.** The Moseley Award of \$25 is given to the student in the senior class who holds the highest scholarship achievement in required nursing courses on the basis of cumulative grade point average. This award was created by an alumna, Matilda Holleman Moseley, and has been given annually for more than twenty years.

**Outstanding Service Award.** The Outstanding Service Award is presented to the student who has demonstrated outstanding service to the School of Nursing or community.

## Enrollment for the Duke Summer Session

Duke undergraduates who plan to attend one or more terms of a Duke summer session, or who plan to take a course in independent study during the summer should register, if possible, in the spring at the same time they register for the fall semester. Enrollment after the spring registration period may be initiated in the Office of the Summer Session. Undergraduates in universities or colleges other than Duke University should apply directly to the Director of Summer Educational Programs, Duke University, Durham, North Carolina 27706.

Distinctive features of summer session instruction include various conferences, sponsored by several of the departments, and a program in marine biology offered at the Duke Marine Laboratory, Beaufort, North Carolina 28615. (See the *Bulletin of Summer Educational Programs*.)



## Changes in Status

**Withdrawal and Readmission.** Students who wish to withdraw from the college must give official notification to their academic dean. For students withdrawing on their own initiative prior to the last four weeks of regular classes in the semester, or the equivalent time in the summer terms, a *W* is assigned in lieu of a regular grade for each course. After these dates an *F* grade is recorded unless withdrawal is caused by an emergency beyond the control of the student, in which case a *W* is assigned by the student's Dean.

Applications for readmission are made to the appropriate school or college. Each application is reviewed by officers of the school or college to which the student applies, and a decision is made on the basis of the applicant's previous record at Duke, evidence of increasing maturity and discipline, and the degree of success attendant upon activities during the time away from Duke. Students who are readmitted usually cannot be housed on campus.

Applications for readmission must be completed by 1 November for enrollment in January, by 1 April for enrollment in the summer, and by 1 July for enrollment in September. For readmission to the School of Nursing, however, it is required that the readmission procedure be completed by 1 February for September enrollment and by 1 November for January enrollment.

**Leave of Absence.** An upperclassman in good standing may apply in writing to the appropriate academic dean to take a leave of absence for one or two semesters.

In order to receive a leave of absence, a student must apply by the end of the registration period for the semester immediately preceding the leave. If the leave is approved, the University will place those students in study abroad programs and on medical or financial leaves in the general housing lottery provided that the student submits the appropriate information to the Office of Student Affairs by the end of the course registration period of the semester immediately preceding the leave. Those students approved for personal leaves are not guaranteed on-campus housing but will be placed with top priority on the housing waiting list provided the same deadline stated above has been met. Unless an exception for an emergency is authorized by the students' academic deans, students applying after the course registration cited above will lose their priorities in University housing for the period following the leave.

Registration materials will be mailed to a student on leave, but final registration is, of course, contingent upon the students fulfilling the terms of the leave. Students failing to register during their leaves will be withdrawn from the University and will have to apply for readmission.

A student who undertakes independent study under Duke supervision and for Duke credit is not on leave of absence even if studying elsewhere. The student registers at Duke as a nonresident student and pays the appropriate fees or tuition at Duke. This also applies to Duke programs conducted away from the Durham campus.

**Transfer Between Duke University Schools.** A student in good standing may be considered for transfer from one Duke undergraduate school or college to another, upon written application and request for letter of recommendation from the academic dean. The review of requests to transfer involve consideration of a student's general academic standing, citizenship records, and relative standing in the group of students applying for transfer. The school or college to which transfer is sought will give academic counseling to a student as soon as intention to apply for transfer is known, although no commitment will be implied. Students wishing to transfer to the School of Nursing for the succeeding year must complete transfer

proceedings by 1 February; however, openings for transfer students are limited, and students are accepted only at the junior level. Students seeking transfer are advised to consult the Director of Academic Programs in Nursing as early as possible.

A student may apply to transfer at any time prior to, or after, receiving a baccalaureate degree. If admitted after having earned a baccalaureate degree, a student must undertake prescribed additional undergraduate work to qualify for a second baccalaureate degree.

**Full-Time and Part-Time Degree Status.** Ordinarily candidates for degrees are expected to enroll for a normal course load each semester. A student who needs to change from full-time status, however, or from part-time to full-time status, must confer with an academic dean. For special reasons approved by the Dean, a full-time student, who is qualified to continue, may register as a part-time student for not more than two courses. Part-time students may not live in the residence halls.

**Resident and Nonresident Status.** Sophomores, juniors, and seniors who wish to live off-campus may apply to the Office of the Dean of Student Affairs or, if appropriate, to the Dean of Student Affairs of the School of Nursing. (See the chapter, Student Life.)

**Nondegree to Degree Status.** A nondegree student must apply to the Office of Undergraduate Admissions for admission to degree candidacy.

## Study Elsewhere

**Concurrent Enrollment.** A student enrolled at Duke may not enroll concurrently in any other school or college without special permission of the appropriate academic dean. (See, however, the statement regarding the reciprocal agreement with the University of North Carolina at Chapel Hill, North Carolina Central University in Durham, and North Carolina State University at Raleigh.)

**Limitation on Work Taken Elsewhere.** After matriculation as a full-time degree candidate in Trinity College of Arts and Sciences or the School of Nursing, a student may receive credit toward the B.S. or A.B. or B.S.N. degree for a maximum of two courses taken at another institution, whether in the summer, while regularly enrolled at Duke, while withdrawn voluntarily from the college, or while on leave of absence (other than for an approved program of study abroad or an approved program at another institution in the United States). Ordinarily, no credit will be accepted for course work taken while a student is withdrawn involuntarily. For purposes of this regulation, advanced placement credit is considered as work taken at Duke, and the provision of the residency requirement which allows a student to take the final courses elsewhere remains in effect. (See the section on residence in the chapter, Degree Programs.)

**Summer Schools.** Approval forms for courses to be taken at institutions other than Duke may be obtained from the offices of the academic deans. Students wishing to transfer credit for proposed summer work at another accredited college should present a summer catalogue of that college to the appropriate Dean and Director of Undergraduate Studies and obtain their approval prior to taking the courses.

**Study Abroad.** A Duke student may earn credit for up to eight semester-courses during an academic year for approved work completed at a foreign university or for an approved program abroad sponsored by Duke or by another American college or university. To earn the equivalent of four Duke course credits

each semester, or eight for a full academic year, a student who studies abroad will be expected to take a full course load as defined by the program or institution involved. Ordinarily, work to be considered for transfer credit must be done in the language in which courses are normally given at the institution attended. Duke, at present, offers several programs in cooperation with other universities. Students accepted may study at:

*Rome, Italy.* As one of the participating members in the Intercollegiate Center for Classical Studies in Rome, Duke University nominates classics majors and other students with strong classical interests for admission to a semester's work at the center, usually in the junior year. Instruction is offered in Greek, Latin, ancient history, ancient art, and archaeology. Some scholarship help is available.

*Munich and Freiburg, Germany.* Admission to these programs entails matriculation at the University of Munich or the University of Freiburg. The student must, therefore, meet their admission standards. Courses are taken in German language, literature, art, and history through Wayne State University, while additional courses are taken at the German universities.

*Warwick, England.* In the Warwick Exchange Program, selected Duke students spend a year in study at the University of Warwick, while students from Warwick study for the same period at Duke. The program, which is designed especially for majors in English, is administered jointly by Duke and the University of Warwick.

*Harlaxton, England.* In the School of Nursing, the opportunity to study nursing in Harlaxton, England, is available to senior nursing students during the spring semester. Information and applications are available from the Director of Academic Programs of the School of Nursing.

*Vienna, Austria.* From time to time Duke sponsors a Wind Symphony semester program in Vienna.

A leave of absence from the University is granted for approved study abroad. Whenever possible, arrangements are made for students to register, while abroad, for the semester in which they plan to return.

Duke University also sponsors summer programs in Oxford, England, and in Germany, Israel, and Spain. Credit for not more than two courses may be earned.

A student who wishes to receive transfer credit for study abroad should take into account the following criteria established by the faculty and administered by the Committee on Study Abroad:

1. A scholastic average of at least a B-.
2. Provisional approval to study abroad from the adviser on study abroad and the Director of Undergraduate Studies in the major department.
3. Certification, when applicable, from the foreign language department concerned, that the student has an adequate knowledge of the language of the country in which study is pursued.
4. Approval, obtained before leaving Duke, of the appropriate Director of Undergraduate Studies for each course to be taken abroad, as well as approval of the program by the adviser on study abroad.
5. Permission for leave of absence once program plans are complete.

Further information and counsel may be obtained from the adviser on study abroad, in 105 Allen Building; all Trinity College students are responsible for following the procedures and deadlines set forth in Duke's study abroad booklet *Opportunities for Undergraduate Study Abroad* available in that office. In all cases the adviser must be informed in advance about a student's plans if credit for the work is desired.

## Other Information

**Education Records.** Duke University adheres to a policy permitting students access to their education records, with the exception of confidential letters of



recommendation received prior to 1 January 1975, and certain confidential financial information. Students may request review of any information which is contained in their education records and may challenge the content of their education records by appropriate procedures. An explanation of the complete policy on education records may be obtained from the Associate Registrar.

No information contained in student records (academic or otherwise) is released to persons outside the University or to unauthorized persons on the campus, without the consent of the student. A student grants consent by signing a form which authorizes the release of data. Specific consent is required for the release of information to any person or organization outside the University, and it is the responsibility of the student to provide the necessary authorization and consent. Blank forms to grant or revise the permission are available in the Offices of the Dean of Student Affairs, the Dean of the School of Engineering, the School of Nursing, and the University Registrar.

**Identification Cards.** Undergraduate students are issued identification cards and semester enrollment cards which they should carry at all times. These cards are the means of identification for library privileges, University functions, and services available to University students. Students will be expected to present their cards on request to any University official or employee. The cards are not transferable, and fraudulent use may result in loss of student privileges or suspension. A student should report the loss of a card immediately to the Office of the Registrar. The cost of a new identification card is \$5.





# Cooperative Programs



## Reciprocal Agreements with Neighboring Universities

Under a plan of cooperation between Duke University and the University of North Carolina at Chapel Hill, North Carolina State University at Raleigh, and North Carolina Central University in Durham, a student regularly enrolled in Duke University and paying full fees may enroll for one approved course each semester at one of the institutions in the cooperative program. If the student takes two or more courses during a summer at Duke, one of the courses may be taken at one of the neighboring institutions under this plan. Courses may be taken only at the main campuses of the cooperating universities.

Approval forms for courses to be taken at neighboring institutions may be obtained from the offices of the academic deans at Duke. Ordinarily, only those courses not offered at Duke will be approved. The student pays any special fees required of students at the host institution and provides transportation.

**Islamic and Arabian Development Studies.** A program in Islamic and Arabian Development Studies was started in 1977 assisted by grants from the Government of Saudi Arabia and several corporations in the United States. The program embraces a distinguished lecture series which, during the 1978-79 academic year, brings to Duke six distinguished lecturers on Islamic and Arabian affairs. A similar lecture series will be given in subsequent academic years. The program also embraces an outreach program which includes the College of Charleston, the University of North Carolina at Charlotte, Southwestern at Memphis, the University of Tennessee, and the Southern Center for International Studies.

An international conference on problems of development of the Arabian Peninsula is planned for 1980 and a southeastern regional conference on the same topic is planned for 1979. The program also supports the teaching of three years of Arabic and assists in the interdisciplinary course in Islamic Civilization by scheduling the distinguished lecture series at the time that course meets.

The program also sponsors graduate seminars from time to time. In 1980 it will offer a senior graduate seminar on comparative development problems in the Islamic world.

**Judaic Studies at Duke University and the University of North Carolina at Chapel Hill.** Established in 1973 and supported by Duke University and the University of North Carolina at Chapel Hill, the Cooperative Program in Judaic Studies provides the opportunity of studying Jewish civilization through a broad range of courses including Hebrew language and literature, Yiddish language and literature, the archaeology of Palestine, and the history of Jewish religious thought. The program is administered by a joint planning council which also sponsors visiting speakers and professorships, library acquisitions, exchange programs with Israeli universities, summer school programs in Israel, and a publications program. Students seeking further information on the program in Judaic studies should consult with Dr. Eric Meyers or Dr. Kalman Bland in the Department of Religion.

## Continuing Education

*Academic Study.* Local adult residents may pursue academic study at Duke (1) as provisional degree candidates for those resuming or beginning a bachelor's degree; (2) as nondegree students, for those seeking a sequence of credit courses; and (3) as students completing the last year of work towards a degree at another institution. These students are given academic and career counseling by the Office of

Continuing Education. They are subject to most of the regulations set forth for degree candidates. Continuing education applications may be obtained from the Office of Undergraduate Admissions and must be returned to that office, accompanied by a \$20 application fee, by 15 July for the fall semester and by 1 December for the spring semester.

*Peer Counseling.* Peer counseling assists persons making decisions about returning to work, re-entering school, career planning, life changes, and individual goal setting.

*The Center for Lifetime Learning.* The Center for Lifetime Learning provides noncredit courses and conferences throughout the year.

*The Institute for Learning in Retirement.* The institute is for persons over fifty years of age who recognize in themselves a need to continue learning and sharing knowledge. Institute members design, teach, and govern their own activities. For brochures on each program and for fuller information, contact the Office of Continuing Education, 107 Bivins Building.

## Reserve Officer Training Corps

**The Naval Reserve Officer Training Corps.** Two basic programs are offered by the Department of Naval Science through which students can qualify for Naval commissions upon graduation. The first, the Scholarship Naval Reserve Officer Training Corps Program, provides a maximum of four years of university study largely at government expense, followed by a commission in the regular Navy or Marine Corps. The second, the College Program, leads to a commission in the Naval Reserve or Marine Corps Reserve.

*The Scholarship Program.* Scholarships are awarded on the basis of an annual nationwide test and selection procedure. Students selected are enlisted in the Naval Reserve, appointed midshipmen, USNR, and provided four years' tuition, fees, and textbooks at government expense. In addition, they receive subsistence pay and summer active duty pay which amounts to approximately \$1,300 each year. Students in the NROTC Scholarship Program are encouraged to pursue majors in engineering or in specific science fields (mathematics, chemistry, physics, oceanography, or computer science). Other fields of study leading to a baccalaureate degree are permitted with the approval of the Professor of Naval Science. Students participate in two summer training cruises aboard ship and receive aviation, amphibious, surface, and submarine indoctrination at Naval shore stations for one summer.

Upon graduation, students receive commissions as Ensigns in the regular Navy, or as Second Lieutenants in the regular Marine Corps, after which they serve with the Navy or Marine Corps as required by the Secretary of the Navy in the same manner as graduates of the Naval Academy. The minimum period of active duty is four years for regular officers.

*The College Program.* The College Program is designed for freshmen regularly enrolled at Duke University who desire to qualify for a commission in the Naval or Marine Corps Reserve while pursuing normal courses of study. They have the status of a civilian who has entered into a mutual contract with the Navy. They enlist in a component of the Naval Reserve and receive subsistence pay of \$100 each month during the last two academic years. In addition, they receive active duty pay (about \$300) during the required summer cruise, which normally takes place between the student's junior and senior years. Upon graduation, students receive commissions as Ensigns in the Naval Reserve, or as Second Lieutenants in the Marine Corps Reserve, and are ordered to active duty for three years.

*Scholarship and College Program Students.* No distinction is made between students in the two programs in the NROTC unit. College Program students may compete



each year for the Scholarship Program. If selected, they will be appointed to scholarship status, with the attendant benefits and pay. Students in both programs are provided necessary uniforms, equipment, and naval science textbooks; both are furnished the same instruction, and both are required to wear uniforms on drill days and on special occasions prescribed by the Professor of Naval Science. If they desire, students in either program may elect the Marine Corps option at the beginning of the junior year, thereby qualifying for a commission in the Marine Corps.

*Academic Requirements for a Commission.* The academic program for an approved degree and a commission for Scholarship and College Program students must include all naval science courses, drill, laboratories, and seminars. Additionally, all NROTC Navy Option Scholarship students must complete one year of calculus and one year of physics by the end of the sophomore and junior years, respectively.

NROTC College Program students are encouraged, but not required, to take calculus and physics. However, a small number of technical electives are required to ensure that the student obtains some familiarity with the sciences. Completion of calculus and physics will be considered in recommendations for scholarships made by the Professor of Naval Science.

**The Air Force Reserve Officers Training Corps (AFROTC).** This unit functions as the Department of Aerospace Studies. It selects, trains, and commissions college men and women who desire to serve in the United States Air Force. Two AFROTC programs exist, a four-year and a two-year program.

The four-year program consists of two segments, one covering the freshman and sophomore years and including general military courses, and the other covering the junior and senior years and including professional officer courses. These two segments are linked by a four-week summer field training encampment at selected Air Force bases. Entry into the four-year program is open to freshmen and to sophomores who are willing to make up the course work missed as a result of late entry into the program. Students entering the program as sophomores take both the freshman and sophomore courses in one year.

Applications for the two-year program should be submitted not later than the spring semester of the sophomore year. Following their sophomore year, candidates attend a six-week field-training encampment which concentrates on the course work missed during the freshman and sophomore years.

Cadets may compete for a scholarship if they desire: freshmen, for a three-year scholarship to begin with the sophomore year; and sophomores, for a two-year scholarship to begin with the junior year. Candidates for the two-year program may compete for a scholarship during the six-week summer encampment. Scholarships provide full tuition, the cost of all required books, certain fees, and a stipend of \$100 per month. Scholarships are available in pilot, navigator, missile launch, technical, prehealth, nurse, and nontechnical areas. All cadets, whether they hold scholarships or not, receive a tax-free stipend of \$100 per month (limited to \$2,000) during their junior and senior years.

Entry into the professional officer segment of the AFROTC Program entails four years of active duty and two years of inactive reserve duty. For details on entrance and commissioning requirements, direct inquiries to the Department of Aerospace Studies.



# Student Life



## Residential Facilities

It is the aim of the University to provide, through its residential program, convenient and comfortable lodging that features opportunities for informal learning and the enrichment of the total educational experience. The living units are designed to provide opportunities for interaction with faculty, staff, and students from other parts of the country and to be supportive of an intellectual atmosphere and an active cultural and cocurricular program.

Freshmen are required to live in University residences unless they live with parents or close relatives. Residence hall accommodations are not available to transfer students, to former students who have been readmitted, or to part-time students. Students beyond the normal fourth year of the undergraduate program also cannot be granted space in the dormitories.

**Residences for Undergraduate Students.** Many students in Trinity College of Arts and Sciences and in the School of Engineering live in residence halls or houses on the East and West Campuses and in the furnished Central Campus Apartments. Independent men's and women's houses are composed of members of all academic classes. Fraternities are accommodated on campus in other houses. In still other houses men and women are assigned to separate wings or floors. Some houses are assigned entirely to freshmen, especially on West Campus. After the freshman year, their residents may affiliate with a fraternity or with an independent house.

There are two levels of residential organization. In recent years several groups of men's and women's residences on common quadrangles have organized into federations under a faculty fellow and federation government. These larger communities offer a greater diversity and richness of academic and social programs. Each house, however, whether in a federation or not, elects its own officers and council and organizes social, intramural, and other programs.

Every residence hall, except for some fraternities, has at least one resident adviser living in the house. Resident advisers are graduate and undergraduate students who are members of the staff of the Dean of Student Affairs. They are responsible for advising students regarding personal problems, advising the house government in formulating social and cocurricular programs and in aiding the administration in establishing residential programs consistent with the goals of the University.

The residence halls where the majority of the nursing students live are Hanes House and Hanes Annex. All freshmen women in the School of Nursing are

assigned housing in Hanes House and freshmen men are assigned housing in Trinity College residences on East and West Campuses. A limited number of sophomore, junior, and senior women may have the additional option of living in Trinity College residences and in the furnished Central Campus Apartments. Resident advisers, who are members of the staff of the School of Nursing, have apartments in Hanes and Hanes Annex and assist the Dean of Student Affairs in the School of Nursing and the School of Nursing Student Government (NSGA) in planning various programs and social activities in the resident halls. All housing requests and room changes are directed to the Office of Student Affairs in the School of Nursing.

**Living Off Campus.** Students above the freshman level who wish to live off campus should apply for authorization from the appropriate Dean of Student Affairs. Once nonresident status is approved, no guarantee can be made of a space in the dormitories should the student desire to move back on campus.

## Dining Facilities

**East Campus.** All students residing on East Campus are required to contract for their meals in the University dining halls each semester. Second-semester freshmen and all upperclassmen have the option of a seven-day plan of twenty-one meals each week, or a five-day (Monday-Friday) plan of fifteen meals each week. First-semester freshmen must take the seven-day plan. (See the chapter on Financial Information.) There are no provisions for changing plans during the semester. On East Campus there are two dining halls; ordinarily, the students who reside in Southgate, Jarvis, and Gilbert-Addoms take their meals in Gilbert-Addoms; those in other East Campus dormitories take their meals in the East Campus Union. The Down Under, a late night, cash food service, is located in Gilbert-Addoms. The large number of students served by the dining halls makes it impossible to provide special diets.

**West Campus and Trent Drive Hall.** The dining facilities on West Campus include two cafeterias with multiple-choice menus; the Oak Room, which is a full-service dining hall where meals and a la carte items are served; and a self-service snack bar, the Cambridge Inn, which is open throughout the day and evening.





Trent Drive Hall has a cafeteria and Gradeli's, a snack bar/delicatessen, which is open until midnight.

Freshmen living in Trent Hall and freshmen in the School of Nursing are required to contract for their meals in Trent Drive Dining Halls by the semester. Their options are the same as those offered to students residing on East Campus.

## Religious Life

Two symbols indicate the importance of the religious dimension for Duke University: *Eruditio et Religio*, the motto emblazoned on the seal of the University, and the location of the Duke Chapel at the center of the campus. People from all segments of the University and the surrounding community come together in Duke Chapel on Sunday morning to worship in a service which offers excellence in liturgy, music, and preaching. The University ministers work with the chaplains from the Roman Catholic, Protestant, and Jewish communities to provide a ministry which is responsive to the plurality of University religious interests. The traditional modes of ministry (pastoral, priestly, and prophetic inquiry) are offered in traditional and contemporary forms.

Students and others in the University have opportunities through the religious life of the University to search for meaning, to ask the ultimate questions, to worship in small communities, to meditate, to participate in contemporary liturgies, to learn from outstanding thinkers in the religious traditions, and to work to bring about a more just and humane society.

## Services Available

**Offices in Each College and School.** In Trinity College of Arts and Sciences, in the School of Engineering, and in the School of Nursing, Deans, faculty members, and counselors are readily available to discuss various concerns with students and to assist them in matters relating to courses, majors, careers, cocurricular activities, and residential life. Each college and school has its own academic deans and advisers. In Trinity College of Arts and Sciences, there are academic deans for upperclassmen, according to the student's declared major or academic division, and a Dean for freshmen. In the School of Engineering and the School of Nursing, each student is assigned an academic adviser for the freshman and for each succeeding year.

The School of Nursing has its own Dean of Student Affairs, whereas the Office of the Dean of Student Affairs has jurisdiction over students in Trinity College of Arts and Sciences and the School of Engineering. The Office of Minority Affairs relates to the needs of all minority students at Duke.

**Student Health Service.** The objective of the Student Health Service is to provide medical care and advice to students. Both the Student Health Services Clinic and the University Infirmary are available to students for that purpose. A separate fee for this service is assessed.

The facilities of the Student Health Clinic are open during both regular and summer sessions to all currently enrolled full-time undergraduate students, as well as to regularly enrolled students in the graduate and professional schools. For treatment of illnesses or injuries, students should first visit the Student Health Clinic. The campus bus makes regular trips to the clinic, and emergency transportation can be obtained from the Duke public safety officers or from ambulance services in Durham. Residential staff personnel should be consulted, whenever possible, for assistance in obtaining emergency treatment. For a description of the specific services provided by the clinic and infirmary, see the *Bulletin of Information and Regulations*.



In addition to the Student Health Service, the University makes available a plan of accident and sickness insurance to cover all full-time students who are enrolled in the University. This plan is designed to complement services normally not accessible to students through the Student Health Service coverage; it covers students both on and off campus, at home, or while traveling between home and school during the interim vacation periods throughout the one-year term of the policy.

**Counseling and Psychological Services.** Counseling and Psychological Services (CAPS) is a component of student services at Duke which was formed in July 1977 by a merger of the former Student Mental Health Service and the former Counseling Center. The purpose of CAPS is to provide a comprehensive, coordinated range of counseling and psychological services to assist and promote the personal growth and development of Duke students. These services are available to all enrolled students.

The professional staff is composed of clinical social workers, psychiatrists and psychologists experienced in working with young adults. They provide direct services to students including evaluation and brief counseling/psychotherapy regarding a wide range of concerns. These include issues of self-esteem and identity, family relationships, academic performance, dating, intimacy, and sexual concerns.

This year CAPS will begin offering some small group experiences focusing on skills development and special interests. These will explore such interests as anxiety reduction, assertiveness training, committed couples, and communication skills. Interested students may contact CAPS for further information.

As Duke's center for administration of national testing programs, CAPS also offers a wide variety of graduate/professional school admissions tests and professional licensure and certification examinations. Another function of CAPS is the availability of the staff to the entire University community for consultation and educational activities regarding student development and mental health issues affecting not only individual students but the campus community as a whole. The staff works with campus personnel including administrators, faculty, student health staff, religious life staff, and student groups in meeting needs identified through such liaisons. Staff members are available to lead workshops and discussion groups on topics of interest to students.

CAPS maintains a policy of *strict confidentiality* concerning information about each student's contact with the CAPS staff. If a student desires that such information be released to anyone, he/she must give written authorization for such release.

There are no charges for initial evaluation and/or brief counseling/psychotherapy; however, where extended interviews are indicated, a fee commensurate with the student's financial situation will be arranged. If appropriate, referral may be made to other staff members or local resources.

Appointments may be made by calling 684-5100 or coming by the office at 214 Old Chemistry Building, West Campus, between 8:00 A.M. and 5:00 P.M. Monday through Friday. If a student's concern needs immediate attention, that should be made known to the secretary and every effort will be made to arrange for the student to talk with a staff member at the earliest possible time.

**Office of Minority Affairs.** The Office of Minority Affairs (OMA) is an interdisciplinary/student service component of the University which attempts to assist minority students in their adjustment to student life. The office has designed and implemented a variety of programs which are aimed at maximizing students' potential for realizing their academic goals. Three major program components are included in these efforts:

*Summer Transitional Program (STP).* This program introduces precollege students to academic and student life at Duke. Intensive study in English, mathematics, and study-skill courses are offered to incoming students during the summer. Individual, group, and peer counseling sessions give students the opportunity to exchange ideas regarding personal concerns. STP students are housed together on campus. If a student is eligible for financial aid, all expenses of the program are covered.

*Counseling in Academic and Social Affairs (CASA).* CASA provides the ongoing leadership of a graduate counselor to each undergraduate student. The counselors visit with students on a regular basis, hold group discussions, and serve their student associates as sources of information and referral. A house course is also designed and taught as an aspect of the CASA program.

*Tutoring Program.* This program maintains tutors on a regular basis for any minority student seeking assistance. Although many referrals come to the tutoring program through supportive academic personnel, most are self-referrals. Tutoring is encouraged and should be arranged as soon as a need is perceived.

Students at the University are invited to make use of the services of the Office of Black Affairs.

**Office of Placement Services.** The Office of Placement Services is the liaison between the University community and potential employers in business, education, and government. The purpose of the office is to give Duke students direction for their careers and to help them to obtain employment commensurate with their qualifications, interests, and desires. An extensive file of openings for permanent, part-time, and summer employment is available, as is a library of general information about careers, employers, and graduate schools. Staff members are available at any time to all Duke students to discuss career plans, permanent and part-time employment opportunities, interviewing techniques, and other related matters.

Students who are nearing the completion of a degree and are interested in interviews with representatives from business and industry, schools and colleges, and government agencies should register with the office in September. Representatives and recruiters begin coming to Duke on 1 October.

*Part-time Employment.* A listing of a wide variety of part-time job opportunities on campus and in the Durham area is maintained in the office. All students interested in working during the school year should register at the beginning of the semester. Every effort will be made to help each student find a job consistent with career interests.

*Career Counseling.* Preliminary exploration of career interests early in the student's academic career is possible through the Career Apprenticeship Program, which offers nonpaid experience in a variety of career fields. This program gives the student the opportunity to gain practical work experience and to broaden the educational experience by related field work during the undergraduate years.

## Student Activities

**Office of Student Activities.** The Office of Student Activities has as its responsibility the coordination of those activities, undergraduate and graduate, that transcend the individual college and schools, with a major emphasis on the development of the full range of these activities as they relate to the educational function of the University. In addition, this office is responsible for giving financial advice to student organizations in cooperation with the Office of the Corporate Controller.

**Associated Students of Duke University.** The Associated Students of Duke University (ASDU) is responsible for articulating undergraduate student thought

and opinion on University-wide matters and for working toward constructive changes in the educational process and University environment. The working philosophy of ASDU is that students have the right to make those decisions which affect primarily students.

The Executive Committee is the coordinating body of all ASDU functions. It consists of the President, four Vice-Presidents (one each from the School of Engineering, the School of Nursing, and Trinity College, and one at large), an Executive Secretary, an Administrative Secretary, chairpersons of the legislative committees, the Speaker of the Legislature, and members appointed by the President.

The ASDU legislature is composed of representatives of each of the undergraduate living groups on campus, representatives of students living off campus, and of representatives of those students residing in Central Campus Apartments. There are also several at-large legislators. It fulfills a primarily administrative role in chartering student organizations, and regulating student elections and certain aspects of conduct. As the representative body of the student government, it registers student opinion and directs action in selected areas through legislation. A budget commission allocates all student fees to various student organizations. Various committees of ASDU, such as those concerned with admissions and financial aid, academic affairs, and University services available to students, undertake projects for the direct benefit of the student body.

**Student Projects for University Development.** Student Projects for University Development (SPUD) is a service organization representing student interests in the continuing development of the University. The elected leaders of major student organizations represent their groups on the SPUD Executive Committee, operating independently of the University administration. The Executive Director of SPUD, with the approval of the Executive Committee, selects the projects which are most important to students' needs and promotes those projects by sponsoring many student activities throughout the year.





**Cultural and Social Organizations.** The scope of the more than one hundred student organizations is suggested by a partial listing of their names: Alpha Phi Omega service fraternity, Black Alliance, Bridge Club, Chess Club, Campus Crusade for Christ, Cheerleaders, International Club, Karate Club, Outing Club, Sailing Club, Students for a Democratic Society, Women's Liberation, Young Americans for Freedom, and the YM-YWCA. Sixteen national and three local social fraternities, as well as nine national sororities, are represented on campus. They are governed by the Interfraternity and Panhellenic Councils, respectively.

Many opportunities are provided on campus in the areas of music and drama. The Chorale, Chapel Choir, Chancel Singers, Wind Symphony, Marching Band, Symphony Orchestra, and Collegium Musicum are examples of music organizations. Duke Players perform established and experimental drama; Hoof 'n' Horn presents musical comedy.

Most academic departments sponsor organizations and programs for students with special academic or professional interests. There are also academic and leadership honorary societies.

The Union Building, located on West Campus, is the center for student activities. It houses, among other groups, the University Union which brings students together in carrying out its stated purpose—to stimulate, promote, and develop the social, recreational, cultural, educational, and spiritual activities of the Duke University community. The union sponsors a broad program including lectures, concerts, recreational activities, dances, and exhibits adapted to the leisure time interests and needs of individuals and diverse groups within the University and Durham communities.

One section of the West Campus Union houses dining facilities, the University store, grill, beer hall, soda fountain, post office, barber shop, bank, and ballroom. Offices of student organizations, meeting rooms, an information center, art and reading lounge, and recreational areas are located elsewhere in the building. Similar services and activity areas are provided on East Campus.

**Office of Cultural Affairs.** The Office of Cultural Affairs is responsible for coordinating entertainment on campus. The office is directly responsible for the Duke Artists Series and Quadrangle Pictures (35mm-film program) and for scheduling the use of Page Auditorium. Advance tickets for most events scheduled in Page Auditorium are sold at Page Box Office. The Office of Cultural Affairs also publishes yearly and weekly editions of the *Duke University Calendar*.

**Media.** The *Duke Chronicle*, the campus newspaper, publishes five issues weekly and the student-operated radio stations, WDBS-FM and WDUK-AM, produce daily programs. Three magazines and a comprehensive yearbook are published by and for students. These publications are under the direction of the Publications Board, which is empowered to choose the editors and business managers, and to review and approve the financial statements of all franchised publications. The *Duke Engineer*, the official student magazine of the School of Engineering, appears twice each semester. It contains articles on technical and semitechnical topics and other matters of interest to the school. *The Charge*, the undergraduate student handbook of the School of Nursing, is published annually by the students. It contains information and regulations of interest to students in the School of Nursing.

**Recreational Activities and Intramural Sports.** The Duke recreational and intramural programs provide all students with opportunities to participate in some form of healthful, informal, and competitive physical activity.

The men's program consists of seventeen different activities: archery, bowling, cross country, golf, handball, horseshoes, tennis, touch football, badminton, racquetball, basketball, swimming, table tennis, volleyball, wrestling, softball, and



track. In a typical year more than 3,000 students compete for many intramural titles and trophies. Each year Duke, the University of North Carolina, North Carolina State, and Wake Forest meet in the annual Big Four Intramural Day.

The women's program facilitates competition in badminton, basketball, bowling, tennis, and volleyball. In addition, special events in other areas of interest are held. Various clubs, including modern dance and water ballet, offer the student opportunities to take part in extracurricular activities.

Through coeducational intramurals, the student is encouraged to participate on a less competitive level, promoting relaxed social and physical activity. Opportunities for competition between men and women are provided in the areas of badminton, table tennis, tennis, and volleyball.

The University's varied athletic and recreational facilities and equipment are available for use by students. The facilities for recreation include a golf course, lighted tennis courts, three swimming pools, a student activities building, three gymnasiums, outdoor handball and basketball courts, an all-weather track, and numerous playing fields and informal recreational areas. A variety of clubs dealing with archery, gymnastics, scuba diving, sailing, cycling, badminton, karate, rugby, soccer, and other activities are available to interested students.

**Intercollegiate Athletics.** The athletic department provides programs with the primary goal of fostering intercollegiate athletics by providing the best possible framework within which student athletes can compete. The department has a dual responsibility to provide a high-quality athletic program and environment so that all students have the opportunity to compete to the fullest extent of their abilities. Duke is a member of the National Collegiate Athletic Association, the National Association of Intercollegiate Athletics for Women, and the Atlantic Coast Conference (ACC). The ACC consists of Clemson, Duke, Maryland, North Carolina at Chapel Hill, North Carolina State, Virginia, and Wake Forest.

The intercollegiate program for men at Duke University offers thirteen varsity sports. They are football, cross country, soccer, basketball, swimming, fencing, wrestling, indoor and outdoor track, baseball, golf, tennis, and lacrosse. Freshmen are eligible to participate on all varsity teams. A junior varsity program is provided in basketball.

The women's athletic program provides intercollegiate competition in seven sports: basketball, golf, gymnastics, field hockey, swimming, tennis, and volleyball. A junior varsity program is provided in field hockey.

The Director of Athletics and the Assistant Directors of Athletics provide departmental leadership and coordinate all athletic policies with the University Athletic Council. The council consists of representatives from the undergraduate student body, the faculty, the administrative staff, and the alumni. They meet with the faculty Chairman of Athletics and the Director of Athletics periodically during the school year to discuss the athletic programs and make recommendations concerning athletic policies. The Chairman of the Council, appointed by the President of the University, is the official University representative at national and conference athletic meetings. The women's program is directed by an Assistant Director who serves under the leadership of the Director of Athletics.

## Judicial System and Regulations

Duke University expects and requires of all its students full cooperation in developing and maintaining high standards of scholarship and conduct. Each student is subject to the rules and regulations of the University currently in effect, or which are put into effect from time to time by the appropriate authorities of the University. At the same time, the individual is responsible for decisions and

choices within the framework of the regulations of the community, as Duke does not assume *in loco parentis* relationships.

Students, in accepting admission, indicate their willingness to subscribe to, and be governed by, these rules and regulations. They acknowledge the right of the University to take disciplinary action, including suspension or expulsion, for failure to abide by the regulations or for other conduct adjudged unsatisfactory or detrimental to the University.

Responsibility for prescribing and enforcing rules and regulations governing student conduct rests ultimately with the Board of Trustees of Duke University and, by delegation, with administrative officers of the University. In the undergraduate schools, and in the University as a whole, many of these rules have been established over the years by cooperative action between students and administrative officers and, in the case of some rules, with participation of faculty members as well. Representative student organizations, such as student governments and judicial boards, and more recently, community-wide bodies of students, faculty, and administrators, have initiated proposals for policies and rules necessary to assure satisfactory standards in academic and nonacademic conduct. These proposals have been accepted by University officers and have become a substantial, if not all-inclusive, body of rules governing student life at Duke. For current regulations, refer to the *Bulletin of Information and Regulations*.

Students in Trinity College of Arts and Sciences, the School of Engineering, and the School of Nursing constitute an undergraduate community whose members are subject to the Undergraduate Community Code. Violations of the code and of certain University regulations are adjudicated before the Undergraduate Judicial Board, composed of representatives of the student body, the faculty, and the administration. The constitution of the board, the Judicial Code of the Undergraduate Community, the procedural safeguards, and rights of appeal guaranteed to students are published in the *Bulletin of Information and Regulations* for the undergraduate community. As provided in the judicial structure of the University, each residential unit has a judicial board which has jurisdiction over all offenses involving violations of regulations relating to dormitory procedures and social regulations not covered by the Undergraduate Community Code or University policies and regulations. The Residential Appeals Board may function as an appellate body in cases involving appeals from the individual house judicial boards and has original jurisdiction in disputes involving two or more dormitories. For further information, refer to the *Bulletin of Information and Regulations*. The Judicial Board of the Nursing Student Government Association (NSGA) has the major role in supervising those phases of community living which directly concern the welfare of the students in the School of Nursing.

# Admission



## Principles of Selection

James B. Duke, in his Indenture of Trust, requested that "great care and discrimination be exercised in admitting as students only those whose previous record shows a character, determination, and application evincing a wholesome and real ambition for life." In this light, and in view of the institution's limited enrollment, Duke University looks beyond the basic characteristics of academic competence possessed by the majority of applicants. It seeks, in each prospective student, regardless of race, sex, color, religion, or national origin, not only evidence of intellectual promise and maturity of judgment, but also a degree of positive energy. Often, this energy is expressed in the form of special talents and accomplishments; it is seen consistently in a student's determination to make creative use of the opportunities and challenges posed by Duke University.

## Requirements for Application

Although there are no inflexible requirements as to subject matter, students are urged to choose a broad and challenging high school program. At least twelve units of acceptable college preparatory work must be presented for review. Applicants to the School of Engineering are advised to take four units of mathematics and at least one unit of physics or chemistry.

The Scholastic Aptitude Test, given by the College Entrance Examination Board, and three achievement tests (one of which must be in English composition) are required of all candidates for freshman admission and must be taken before the application deadline. Since placement in language study can be determined by an achievement test score, it is recommended that a candidate who expects to continue study in a foreign language take the CEEB Achievement Test in that language. Candidates may submit results of the American College Testing Assessment Program (ACT), provided the test is taken prior to the application deadline; the scores must be made available to the Admissions Committee thirty days before the decision date. Candidates for the School of Engineering who elect to take the CEEB test battery are required to take the achievement test in mathematics.

## Application Procedures

Application forms and a *Bulletin of Information for Prospective Students* may be obtained from the Office of Undergraduate Admissions, Duke University, Dur-



ham, North Carolina 27706. A nonrefundable processing fee of \$25 must accompany the completed application form.

A personal interview at Duke is not required for admission; students who find it possible to visit the campus, however, may write for an interview or participate in one of the group information sessions held during particularly busy periods. Interviews cannot be granted during the early months of the year, when applications are under review.

**April Notification.** Candidates for admission to the freshman class must apply no later than 1 February of their senior year in secondary school and normally do so during the preceding autumn. Decisions are mailed from the University by 15 April, and accepted candidates are expected to reserve a place in the class by 1 May.

**February Notification.** Students who indicate on their applications that they wish to learn of their admissions decisions by 1 February of their senior year must observe a 1 December application deadline. Results of the Scholastic Aptitude Test and achievement tests (or the ACT) taken through December may be submitted for review. Applicants for February notification are urged to apply concurrently to other colleges, although those who are accepted by Duke in February must pay the registration and room deposit fees by 15 February to reserve a place in the class. Because neither of the two notification dates is intended to be more competitive than the other, students who receive negative decisions in February will not have their applications reviewed once again in April.

**Mid-year Admission.** Mid-year admission allows a limited number of freshmen to begin their college work a semester early or to postpone matriculation for a semester. Mid-year applicants are expected to complete all the requirements for fall admission. The application deadline for new candidates is 15 October; students will be notified of the decision on their applications by 15 November, with the expectation that those who are accepted will reply by 1 December.

**Transfer Admission.** Transfer admission from other accredited institutions may be arranged for a limited number of students each semester. Because the transcript of at least a full year of academic work is preferred by the Admissions Committee, and because transfer students are required to spend their last two years at Duke, most candidates apply to Duke during their third or fourth semester in college. Candidates submit official transcripts of all work completed at other accredited colleges, scores on the Scholastic Aptitude Test, and employment records if there has been an extended period of employment since graduation from secondary school. See the section on transfer credit in the chapter, *Academic Procedures and Information*.

All transfer students should expect to be responsible for their own housing arrangements. The Office of Housing Management provides assistance to students who seek housing and/or roommates.

September transfer students meet a 1 April application deadline, learn of their decisions by 15 May, and respond to the University by 1 June. January transfer students apply by 15 October, learn of their decisions by 15 November, and reply to the University by 1 December. Transfer students for the School of Nursing are accepted only for September admission; they must complete all transfer application processes by 1 April.

**Nondegree Students.** Admission as a nondegree student at Duke is limited to: people residing in the area who, because of family and work responsibilities, have no other access to education; Duke graduates of the preceding year; people who will be moving to the area and who will reside here for a substantial period of time; local high school students; and Duke University employees. These students

are given academic and career counseling by the Office of Continuing Education; they are subject to most of the regulations set forth for degree candidates. Continuing education applications may be obtained from the Office of Undergraduate Admissions and must be returned to that office, accompanied by a \$20 application fee, by 15 July for the fall semester and by 1 December for the spring semester.

At least four courses must be completed successfully before a nondegree candidate may apply for degree candidacy. Students who plan to complete the four courses should not expect automatic admission to the University. More detailed information is available from the Office of Continuing Education, 107 Bivins Building, Duke University, Durham, North Carolina 27708.

**Readmission of Former Students.** A student who desires to return, following withdrawal from college, should apply to the appropriate college or school. See the section on readmission procedures in the chapter, Academic Procedures and Information. Students who have been withdrawn from the University for five or more years must submit a new application to the Director of Undergraduate Admissions.



# Financial Information





## Tuition and Fees

No college or university can honestly state that an education at the college level is inexpensive. Fees paid by students cover less than half the cost of their instruction and the operation of the University. Income from endowment and contributions from alumni and other concerned individuals meet the balance and assure each student the opportunity to pursue an education of unusually high quality.

Students are urged to give their attention first to the selection of institutions which meet their intellectual and personal needs, and then to the devising of a sound plan for meeting the cost of their education. This process will require an in-depth knowledge of both the University's financial aid program and the resources of the student's family. A brochure describing in detail the various forms of financial aid may be obtained from the Office of Undergraduate Financial Aid, Duke University, Durham, North Carolina 27706.

**Estimated Expenses for an Academic Year.\*** Certain basic expenditures, such as tuition, room, and board, are considered in preparing a student's budget. These necessary expenditures, with a reasonable amount allotted for miscellaneous items, are shown below:

Tuition	\$4,230†
Residential Fee	
Single room	\$1,079-\$1,310
Double Room	\$799-\$970
Food	
Seven-day board plan	\$1,134
Five-day board plan	\$1,014
Cafeteria estimate	\$1,308
Books and Supplies	\$250
Student Health Fee	\$115

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†For juniors and seniors in the School of Nursing, the tuition is \$4,480.

It should be realized that additional expenses will be incurred which will depend to a large extent upon the tastes and habits of the individual. The average Duke student, however, can plan on a budget of approximately \$7,300 for the

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\*The figures contained in this section are projections and are subject to change prior to the beginning of the fall, 1979, semester.



academic year. This budget is all-inclusive except for travel costs, and major clothing purchases.

**Debts.** No records are released, and no students are considered by the faculty as candidates for graduation, until they have settled with the Bursar for all indebtedness. Bills may be sent to parents or guardians provided the Bursar has been requested in writing to do so. Failure to pay bills on or before the due dates will bar the student from class attendance until the account is settled in full.

**Registration Fees and Deposits.** On notification of acceptance, students are required to pay a nonrefundable first registration fee of \$25 and to make a deposit of \$100. The deposit will not be refunded to accepted applicants who fail to matriculate. For those who do matriculate, \$50 of the deposit serves as a continuing room deposit for successive semesters, and the remaining \$50 serves as a continuing registration deposit.

*Late Registration.* Continuing students who fail to register during the registration period must pay a fee of \$25 to the Bursar.

*ROTC Deposit.* An Air Force ROTC deposit of \$10 is required of students enrolling in air science to cover possible loss of military equipment issued to them. This deposit is refunded to the student upon return of issued equipment.

*School of Nursing.* Special nonrefundable fees are charged as follows: laboratory equipment, sophomores—\$25; physical examination, juniors—\$50. The physical examination fee is not a student health insurance fee, but a charge which covers laboratory tests and a physical examination for students beginning and ending their clinical experience. These physical examinations must be conducted at Duke University. A declaration of satisfactory health is required by the school, for personal protection of the student, and by affiliating clinical agencies; it is also required for registration applications completed at the end of the program. The laboratory portion of the fee includes the cost of a stethoscope. Additional medical fees may be required for certain nursing electives.

*Part-Time Students.* In the regular academic year students who register for not more than two courses in a semester are classified as part-time students. Part-time students will be charged at the following rates: one course, \$529; half course, \$264.50; quarter course, \$132.25; one course plus laboratory or precept, \$705. Registration for more than two courses requires payment of full tuition. Graduate students registered for undergraduate courses will be assessed three units for nonlaboratory courses and four units for laboratory courses. Men and women in nondegree programs who are being considered for admission to degree programs, as designated by the Office of Continuing Education, pay fees by the course whether the course load is one, two, or three courses.

*Auditors.* Auditing one or more courses without charge is allowed for students paying full fees, provided that the consent of the instructor is obtained. Students who are enrolled for one or two courses may audit other courses by payment of \$40 for each course audited. With the consent of the appropriate instructor and the Director of Continuing Education, graduates of Duke may audit undergraduate courses for \$40 per course.

*Duke Employees.* Full-time employees with one or more years of service with the University may request permission to take for credit or audit up to two courses during any one semester. Permission may be granted based on the individual merits and circumstances of each application. Employees receiving permission to take such courses for credit will be charged one-half the tuition rate shown above for part-time students. Employees are required to submit a formal application by 1 December for the spring semester, or 15 July for the fall semester.

**Fees for Course Changes and Transcripts.** Changes in registration for courses may be made without a drop/add fee if they are made during the first

week of classes. Any change made after the first week of classes requires a payment of \$1.50 for each change made. Requests for transcripts of academic records should be directed to the Associate Registrar. Ten days should be allowed for processing. A minimum fee of \$2, payable in advance, is charged for a single copy. A charge of fifty cents will be made for each additional copy on the same order to the same address.

## Living Expenses\*

**Housing.** In dormitories for undergraduate students other than nursing students, the housing fee for a single room ranges from \$1,079 to \$1,310 for the academic year; for a double room, the fee ranges from \$799 to \$970 per occupant. In Trent Drive Hall, the housing fee for a single room is \$1,107 for the academic year; for a double room, it is \$820 for each occupant.

The residential units of the School of Nursing are Hanes House and Hanes Annex. The Hanes House fee for a single room is \$1,209 for the academic year; for a double room, it is \$930 for each occupant. The Hanes Annex fee for a single room is \$913 for the academic year; for a double room, it is \$676 for each occupant.

To reserve University housing for the fall semester, returning students who are eligible for and wish to occupy such housing must make a \$50 prepayment of the housing fee at a designated time during the spring semester.

Detailed information concerning the student's obligations under the housing contract and the consequences of failure to comply are published in the *Bulletin of Information and Regulations*.

**Food Services.** See the section on food services for a description of dining facilities on both campuses and the options or requirements for board contracts. The estimated charge for board is \$567 per semester on the seven-day plan or \$507 per semester on the five-day plan, payable at the time of registration.

## Refunds

In the case of withdrawal from the University, the student may elect to have tuition, as well as room and board (if applicable), held as credit for later study, or refunded according to the following schedule:

<i>Withdrawal</i>	<i>Refund</i>
Before classes begin	Full amount
During first or second week	80 percent
During third, fourth, or fifth week	60 percent
During sixth week	20 percent
After sixth week	None

In the event of death, or involuntary withdrawal to enter the armed services, refunds will be made on a pro rata basis.

The \$50 registration deposit will be refunded to students whom the University does not permit to return, who graduate, or who request the refund prior to registration, thereby indicating their intention not to return for the following semester. The registration deposit will not be refunded to students who register for the following semester but fail to enter.

Arrangements for refund of the \$50 room deposit are described in information furnished to each student by the Department of Housing Management.

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\*The figures contained in this section are projections and are subject to change prior to the beginning of the fall, 1979, semester.

## Student Aid

It is the policy of Duke University to meet the demonstrated need of students with a financial aid award. Demonstrated need is determined by means of a nationally accepted formula approved by the Office of Education.

For the student with demonstrated need, the net cost of an education at Duke University will generally be no greater than that for college attendance at a private institution elsewhere. It is the intention of the Office of Undergraduate Financial Aid to set each award at a level which will enable a student to meet all the costs of attending Duke University, taking into consideration the contribution that can reasonably be expected from the student, the family, and any available outside sources. During the current academic year, approximately one-third of the student body received more than six million dollars in aid of various types.

**Financial Aid for Entering Freshmen.** Candidates should initiate their application for financial aid concurrently with their application for admission during the fall semester of their senior year in secondary school. Instructions concerning the specific requirements and deadline dates will accompany application materials. The financial aid form must be submitted to the College Scholarship Service. This form may be obtained either from a high school guidance counselor or from the financial aid office. A certified copy of the parents' current Federal Income Tax Form 1040 must be submitted to the financial aid office on or before 1 May.

A student in residence who is receiving financial assistance based upon need may not register an automobile on campus during the academic year for which the aid is granted without special permission for an appropriate reason. Requests for permission to register a car must be submitted to the financial aid office.

**Renewal of Financial Aid after the Freshman Year.** Each year students must file an application for renewal of financial aid. This application must include a new financial aid form and a certified copy of the parents' current Federal Income Tax Form 1040.

To have financial aid renewed, a student must be in good academic standing with the University. A. B. Duke and J. A. Jones Scholars are expected to maintain an average considerably higher than the minimum.

**Types of Financial Aid.** Gift scholarships or grants, long-term loans, and employment are integral parts of the financial aid program, and some portion of the aid offered an undergraduate is normally in each of these forms. In 1977-1978, the self-help portion consisted of an \$950 loan and a job paying \$800. Acceptance of a gift scholarship does not require the student to undertake the loan or job portions of the award. Duke has several scholarships based on need which are available from personal endowments and corporations. Some are intended for entering freshmen, whereas others are awarded to upperclassmen. These scholarships may be based on achievement in a particular field or on an outstanding overall record.

**Gift Scholarships.** The following are among the named gift scholarships offered through Duke University:

*Angier B. Duke Memorial Scholarships.* Recipients of these awards are students whose superior records mark them as young men and women who give promise of becoming outstanding leaders in their chosen fields of endeavor. Candidates for admission to the freshman classes in Trinity College of Arts and Sciences, the School of Engineering, and the School of Nursing are eligible to apply. Forty are usually available for each freshman class with a value of \$1,000 to \$5,500 annually, depending upon financial need. There are also three scholarships of equal value



available for a student's junior and senior years. Rising juniors are invited to apply for this scholarship prior to the beginning of the second term of the sophomore year. In addition, Angier B. Duke scholars are given the opportunity to participate in a seven-week summer-tutorial program at Oxford University.

*W. N. Reynolds Memorial Scholarships.* Recipients of these awards are students of outstanding ability and/or need who have made superior records and show promise of constructive leadership. In considering candidates for the awards, consideration will be given in the following order:

1. Children of employees of R. J. Reynolds Tobacco Company or any of its affiliates or subsidiaries.
2. Children of families residing in Forsyth County, North Carolina.
3. Other candidates who are residents or natives of North Carolina.

Number available: four for each freshman class.

Value: \$500 to \$4,300 annually.

*A. J. Fletcher Scholarships.* These music department scholarships are given to students who can demonstrate, by tape or audition, talent and achievement in instrumental or vocal performance. These awards range between \$500 and \$1,200 per year, depending on need, and are renewable annually for up to four years. Although recipients are not required to major in music, they are expected to study privately and to participate in departmental performing groups.

*United Methodist Scholarships.* A number of United Methodist Scholarships, valued at \$500 per year, are available on a basis of demonstrated need to Methodist students who have given evidence of leadership in their local Methodist Youth Fellowship groups.

*Alice M. Baldwin Scholarships.* One or more of these scholarships, varying in amount from \$200 to \$1,000, are awarded to rising seniors in Trinity College of Arts and Sciences on the basis of scholarship, character, and leadership.

*Evelyn Barnes Memorial Scholarship.* One \$400 or two \$200 grants are awarded to undergraduate women who are contributing to the musical life of the University. Scholarship, character, and leadership are considered. Recommendation by a member of the music faculty is required.

*Panhellenic Scholarship.* A scholarship of approximately \$500 is awarded to an upperclass woman in Trinity College of Arts and Sciences on the basis of scholarship, character, leadership, and service.

*Delta Delta Delta Scholarship.* A scholarship of \$200 is awarded by Delta Delta Delta to an undergraduate woman on the basis of scholarship and character. The winner of this award is eligible to compete for the national award of a Delta Delta Delta Scholarship of \$1,000.

*Sandals Scholarship.* A scholarship of approximately \$200 is awarded to a rising sophomore woman in Trinity College of Arts and Sciences, on the basis of scholarship, character, leadership, and potential for contributions to the University community.

*Welch Harriss Scholarships.* Recipients of these scholarships will receive \$1,000 per year without reference to need. If demonstrated need exceeds \$1,000, then the scholarship will be adjusted accordingly. These awards are made to male freshmen who have achieved outstanding academic records. They are renewable each year as long as the student remains in good academic standing. Consideration will be given in the following order: (1) students from High Point; (2) students from Guilford County, North Carolina; and (3) students from North Carolina.

*Florence K. Wilson Scholarships.* Grants-in-aid are made each year from the Florence K. Wilson Scholarship Fund to nursing students qualifying for financial assistance. This fund was established in 1961 by combining the School of Nursing's Alumnae Association Fund, the students' Florence K. Wilson Scholarship Fund, and contributions from the Wilson family and friends.



*Alyse Smith Cooper Scholarships.* Each year six or more scholarships of various amounts are awarded to students demonstrating both talent and need. Preference is given to students from Alamance County, North Carolina. Majors in music and art, particularly students of piano, organ, and voice receive special consideration.

*Braxton Craven Endowed Scholarships.* Recipients of these scholarships will receive \$3,500 per year without reference to need. If demonstrated need exceeds \$3,500, the scholarship will be adjusted accordingly. Braxton Craven scholars will be chosen on the basis of outstanding academic and extracurricular achievement. First preference is given to Davidson County, North Carolina, residents and second preference to students from North Carolina. The scholarships are approved on a continuing basis, providing satisfactory academic progress is achieved.

*Marian Sanford Sealy Scholarship Fund.* Established in 1966 with an initial gift from the Durham-Orange County Medical Auxiliary, the Marian Sanford Sealy Scholarship is awarded to a student indicating financial need. Personal qualifications supportive of potential to become an outstanding nurse and a distinguished academic record are the criteria for the awarding of this scholarship.

*Lelia R. Clark Scholarship in Nursing.* The Duke Hospital Auxiliary established the Lelia R. Clark Scholarship in Nursing in 1971 to cover tuition and fees for a nursing student, preferably one from North Carolina. Prerequisites for the award are a commendable academic record, financial need, and exemplification of the qualities of a person committed to serving others.

*Federal Nursing Grants.* Funds provided by the federal government are available in limited amounts for grant awards to qualified nursing students.

*J. A. Jones Memorial Scholarships.* The scholarships, sponsored through the Jones Fund for Engineering, are awarded to engineering students whose outstanding academic and personal qualifications suggest that they will become leaders in a technological society. The awards range from a yearly sum of \$500 to \$3,600, depending on the degree of need.

*Robert H. Pinnix Scholarships.* The Robert H. Pinnix Scholarships are awarded annually to two upperclassmen enrolled in the Duke School of Engineering. The award is based upon demonstrated ability, excellence in engineering, and financial need.

*Scholarships for Foreign Students.* A limited number of awards will be made each year to qualified students from other countries who enter either as freshmen or as students with advanced standing. Candidates for these awards are required to submit the Application for Scholarship and Financial Aid and the Financial Aid Application for Foreign Students provided by the Office of Undergraduate Admissions and Financial Aid of Duke University. Two named awards bring foreign students to the campus: the Carol Cranmer Scholarship (named for a former student) and the Roberta Florence Brinkley International Scholarship (named for a former Dean).

In cases where foreign students receive awards based on need, the University will require a deposit equal to the difference between the cost of attending Duke and the amount of the student's award. One-half of this amount, plus interest will be refunded on the first day of each semester.

*The Mary Duke Biddle Scholarship in Music Composition.* This scholarship with a stipend of \$2,500 per year is available to a member of each entering class. It is renewable from year to year so long as the student does satisfactory work. Students wishing to apply for this award will be required to submit examples of their composition. Eligibility is limited to students planning to major in music.

*AFROTC College Scholarship Program.* Students can apply for three-year scholarships during their freshman year and two-year scholarships during their sophomore year. Scholarships are available to male students who qualify for flight training and to both male and female students who major in certain scientific or

engineering fields. The scholarships include tuition, fees, and textbook reimbursement, plus a \$100 per month tax-free allowance.

*NROTC College Scholarship Program.* This program provides for up to four years' tuition and textbooks, laboratory fees, and a \$100 per month stipend. These scholarships, based upon academic achievement, leadership potential, and overall performance, can be awarded at any stage of the student's college career through either a nationwide selection process or by the professor of naval science at the University. In addition, two other two-year scholarships are available to rising juniors: one leads to a career in nuclear power, and the other follows a summer attendance at the Naval Science Institute at Newport, Rhode Island. For further information on any of the above scholarship programs, contact the Professor of Naval Science.

*North Carolina Legislation Tuition Grant.* The North Carolina General Assembly established a program of tuition grants available to North Carolina residents who are full-time students at in-state private colleges and universities. The grant for each eligible student is \$300.

*The Minnie Happer Pruden Scholarships.* These scholarships are available to the daughters of Episcopal clergymen.

*The Huguenot Scholarship.* A scholarship of \$1,000 per year is available from the Huguenot Society of America to a descendant of a Huguenot.

**Loans.** The loan programs which are available to students through Duke University are listed below:

*National Direct Student Loan Program.* Loan funds supplied by the federal government through Part E of Title IV of the Higher Education Act of 1965 are available to qualified students. Repayment of loans under this act normally begins nine months after the student is graduated or leaves college, with complete payment scheduled within a ten-year period. Interest accrues at the rate of 3 percent annually, commencing nine months after the borrower ceases to be a full-time student at an institution of higher education. This loan is part of the student's financial aid award.

*Nursing.* A limited amount of loan funds supplied by the federal government are available to qualified students in the School of Nursing. Interest accrues at the rate of 3 percent annually, commencing nine months after the student ceases to be





a full-time student. A certain percentage of the loan is forgiven for each year the student serves as a professional nurse. This loan is part of the nursing student's financial aid award.

*Federal Guaranteed Loan Program.* Under the Higher Education Act of 1965, Congress established the Federally Guaranteed Insured Student Loan Program, designed to guarantee and insure student loans. These loans are made by banks or other incorporated state lending agencies, with enrollment of the student certified by the school or college. The interest is 7 percent. Students who qualify will have the interest paid by the government while they are in school. Duke University is a guaranteed lender. It should be noted, however, that legislation requires that a student be turned down in writing by a state or local lending agency before Duke can accept a loan application.

**Remission of Tuition.** Children of ministers in the North Carolina and the Western North Carolina Annual Conferences of the United Methodist Church may be eligible to receive a partial tuition grant of \$750 for a maximum of eight semesters of undergraduate study at Duke University. Eligibility is met by the parent being in a regular pastoral appointment and resident in one of the conferences. When the parent is in a special appointment and resident in one of the conferences, eligibility will be determined on an individual basis, depending upon the nature of the appointment. In all cases the decision of the University will be final.

**Employment.** Most financial aid recipients are offered a job as part of their aid package. These jobs require between nine and fifteen hours a week and provide an average stipend of \$800. The money is paid directly to the student. The Office of Placement Services maintains part-time employment listings for the campus and Durham area. All students interested in working during the school year should register at the beginning of the semester. Every effort will be made to help students find jobs consistent with their interests.



Duke University also expects that students receiving financial aid will work during their summer vacation. In the summer before entering college, a freshman should save \$500 for use during the first year of college. In subsequent summers, the student should save \$700 to be used for college expenses.

**Paying the Bills.** Many families finance a college education with the assistance of an insured tuition payment plan regardless of whether they receive financial assistance from Duke. Although these plans are sponsored by a number of private firms, the University refers parents to plans provided by the Richard C. Knight Insurance Agency, Inc. The company provides the University with the full sum required each semester and arranges a schedule for monthly repayment by the subscribing families. The schedules for repayment vary with the program offered by the company. Additional information on this particular tuition payment plan may be obtained by writing to Richard C. Knight Insurance Agency, Inc., Insured Tuition Payment Plan, Sixth Street-James Avenue, Boston, Massachusetts 02116.





# Courses of Instruction



## Definition of Terms

Introductory-level courses are numbered below 100; advanced-level courses are numbered 100 and above. Courses numbered 1 through 49 are primarily for freshmen; courses numbered from 200-299 are primarily for seniors and graduate students. (See the section on course load and eligibility in the chapter, Academic Procedures and Information.)

Odd-numbered courses are usually offered in the fall semester; even-numbered courses in the spring semester. For courses which will be offered in 1979-80, consult the Official Schedule of Courses, available in the Registrar's office. Double numbers separated by a hyphen indicate that credit is contingent upon completion of both courses. Double numbers separated by a comma indicate that although the course is a year course, credit may be received for either course or both. The following symbols, suffixed to course numbers, identify the small-group learning experiences: *S*, seminar; *P*, preceptorial; *T*, tutorial; *D*, discussion section.

## Afro-American Studies

Professors Lincoln and Williams; Associate Professor Gavins

Afro-American studies is designed to provide instruction and study directed toward the experience and concerns of Black America. Though a major is worthwhile and encouraged, many of the course offerings complement other majors and serve also as essential components of a liberal arts education. Entering students should take note that the committee supervising the program is actively considering a basic revision of the requirements for a major.

Courses in Afro-American studies may count toward the distributional requirements. The distributional division for each course follows the description.

**56. The Black Religious Experience in America.** (Also listed as Religion 56.) One course. *Lincoln*

**99. Dimensions of Racism.** The nature of racism, its interconnection with aspects and institutions of American life and its effects. (Humanities.) One course. *Staff*

**100. Philosophy of Black Liberation.** (Humanities.) One course. *Staff*

**138. Political Leadership in the Black Church.** (Also listed as Religion 138.) One course. *Lincoln*

**144. Black Cults and Sects in America.** (Also listed as Religion 144.) One course. *Lincoln*

**145, 146. Afro-American History.** The Black experience in America from slavery to the present. (Also listed as History 145, 146.) Two courses. *Gavins*

**147. The Black in the City.** (Also listed as Sociology 147.) One course. *Preiss*

**150. Third World Literature.** Selected works with special emphasis upon Afro-American, African, and Caribbean writers. (Humanities.) One course. *Staff*

**173, 174. Afro-American Literature.** (Also listed as English 173, 174). Two courses. *K. Williams.*

**189S. Special Topics.** (Humanities or Social Sciences.) One course. *Staff*

**191, 192. Independent Study.** (Humanities or Social Sciences.) Two courses. *Staff*

**193, 194. Independent Study in Community or Field Work.** (Humanities or Social Sciences.) Two courses. *Staff*

**209S, 210S. Selected Topics in Afro-American History, 1619-Present.** Critical view of the collective experience of Afro-Americans with special attention to Black institutional development. (Also listed as History 209S, 210S.) Two courses. *Gavins*

## THE MAJOR

Afro-American Studies 99 is required for the major and is strongly recommended as the introductory course. Afro-American History 145, 146, and 193, 194 are also required. Three other courses above 100 are to be selected. One must be a seminar; and one may be 193 or 194, but not both.

Students majoring in Afro-American studies will receive special counseling in planning their course of study and in considering their future vocation.

## Air Force Aerospace Studies

For courses in Air Force Aerospace studies, see the *Reserve Officers Training Program*.

## Anthropology

Professor Fox, *Chairman*; Associate Professor O'Barr, *Director of Undergraduate Studies*; Professors Friedl and Simons; Professor Emeritus La Barre; Associate Professors Apte, Cartmill, Hylander, Kay (Anatomy), Smith, Stack (Public Policy Studies), and Quinn; Assistant Professors Glander, Graedon (School of Nursing), Hammond, and Pessar

Students without necessary prerequisites listed for a course may request the consent of the instructor for admission.

**93. Human Origins.** Origins and distribution of mankind; primate evolution; a survey of human paleontology and human biology, prehistory, and language; and the origins of human social organization and culture. One course. *Staff*

**94. Elements of Cultural Anthropology.** The dynamics of culture and society; form and function of social institutions. Emphasis is upon primitive societies. One course. *Staff*

**101, 102. Introduction to the Civilization of Southern Asia.** (Also listed as Interdisciplinary Course 101, 102.) Two courses. *Lawrence and staff*

**104. The Anthropology of Cities.** Organization and behavior in urban centers from an evolutionary perspective; cross-cultural analysis of cities. Prerequisite: Anthropology 94, or consent of instructor. One course. *Fox*

**105. History of Anthropology.** Introduction to the origins and development of anthropology as a professional discipline in the Western world, with emphasis on cultural anthropology. Cultural milieu in America, Britain, and France and its effects on the subsequent professionalization and institutionalization of the discipline. One course. *Fox*

**107. Introduction to Linguistics.** Origin and nature of language; methods of descriptive linguistics with reference to historical and comparative linguistics. Prerequisite: sophomore standing. (Also listed as English 107 and under Linguistics.) One course. *Apte, Butters, or Hull*

**114. Anthropology through Film.** An examination of the social and cultural differences among the world's peoples. Comparison of films and written materials as means of learning about anthropological issues and problems. One course. *Friedl*

**115. Sex Roles: A Comparative Perspective.** Examination of social, cultural, and biological bases for variation. Emphasis on division of labor, power, autonomy, and ideology in societies ranging from hunters and gatherers to contemporary industrial states. One course. *Staff*

**116. Language, Ethnicity, and New Nations.** Examination of problems facing newly independent countries of Asia and Africa in developing national integration; from the theoretical perspectives of sociolinguistics and anthropology. Prerequisite: Anthropology 94. (Also listed under Linguistics.) One course. *Apte*

**117. Language, Law, and Politics.** Theories of language in political and legal processes, bilingualism, strategic use of language, political rhetoric, discrimination through language. Primary ethnographic materials from the United States and Canada. Prerequisite: Anthropology 94. (Also listed under Linguistics.) One course. *O'Barr*

**119. Language, Culture, and Society.** Analysis of language behavior within and across societies relating variations in linguistic usage to sociocultural factors: ethnosemantics, social dialects, and ethnography of speech. Prerequisite: Anthropology 94. (Also listed under Linguistics.) One course. *Apte*

**123. Peoples of the World: Mediterranean Europe.** Historical development of its place in the world system; contemporary economic and social change and the cultural and social consequences of such change for rural populations and urban migrants. One course. *Friedl*

**124. Peoples of the World: American Indian.** A comprehensive survey of the Indians of North and South America, including a study of origins and prehistory, archaeology, racial affiliations, languages, material culture, social and political organization, economics, and religion, discussed in terms of the "culture area." One course. *Staff*

**125. Peoples of the World: Africa.** A survey of the indigenous cultures and societies of Africa through the study of kinship, politics, economics, religion, and sociocultural change. Prerequisite: Anthropology 94. One course. *O'Barr*



**126. Peoples of the World: Oceania.** Selected problems in the development of pre-European and post-European cultures. The relationships between man and Pacific environments. Prerequisite: Anthropology 94. One course. *Staff*

**127. Peoples of Mesoamerica.** Development and organization of diverse societies and institutions in Mexico and Guatemala. Prerequisite: Anthropology 94. One course. *Smith*

**129. Peoples of the World: Middle East.** Emphasis on language, kinship, economics, politics, and religion. Prerequisite: Anthropology 94. One course. *Staff*

**130. Social and Cultural Change.** Contemporary theories of change, including innovation, acculturation, and modernization. Prerequisite: Anthropology 94. One course. *O'Barr, Pessar, or Smith*

**131D. Principles of Archaeological Investigation.** (Also listed as Religion 131D.) One course. *Meyers*

**132. Human Evolution.** Evolutionary biology of the primates. Anatomical and behavioral adaptations and phylogeny of fossils and living primates including *Homo sapiens*. Prerequisite: Anthropology 93 or equivalent. (Also listed as Anatomy 231.) One course. *Cartmill, Glander, or Simons*

**133. The Effects of Colonialism and Neo-Colonialism on Native Peoples.** The effect of governmental policies and interests, dominant populations, and local and international economic concerns on indigenous peoples, whether living as enclaves in nation states or as dependencies. One course. *Quinn or Smith*

**134. Political Anthropology.** Comparative study of politics and government in tribal and peasant societies. Evolution of political systems. Political changes resulting from contact and colonialism. Prerequisite: Anthropology 94. One course. *O'Barr, Pessar, or Smith*

**135. Anthropological Research in American Culture.** Substructures in American society studied by ethnographic field methods. Prerequisite: Anthropology 94. One course. *Quinn*

**136. Cross-Cultural Studies of Child Socialization.** Effects of socialization on behavior. Child-rearing theory and practice in different cultures. Relevance of cross-cultural findings for child development theory. One course. *Quinn*

**137. Kinship and Social Organization.** Anthropological study of kinship relations and social groups: family, marriage, residence, terminology, descent, and alliance. Prerequisite: Anthropology 94. One course. *Quinn*

**139. The Anthropology of Complex Society.** Historical development and theoretical directions of anthropological research on such topics as peasant communities, urban neighborhoods, ethnicity, and other institutions in complex societies. Ethnographic examples from Asia, Europe, the United States, and Canada. One course. *Fox or Friedl*

**141. Peoples of the World: Southeast Asia.** Major social, cultural, and religious systems—Hindu-Buddhism and Islam—and examples of populations relatively isolated from the historical expansion of these systems. Emphasis placed on island Southeast Asia. Prerequisite: Anthropology 94. One course. *Staff*

**142. Peoples of the World: South Asia.** Survey of indigenous cultures and societies of India, Pakistan, Sri Lanka, Bangladesh, Nepal, and Bhutan with emphasis on social institutions, behavioral patterns, value systems, and sociocultural change. Prerequisite: Anthropology 94. One course. *Apte or Fox*

**143. Primate Biology.** A comprehensive survey of primate feeding strategies and general ecology. One course. *Glander or Simons*

**144. Evolutionary Study of Behavior.** Phylogenetic comparison of communication, infant socialization, aggression, and sexual behavior as they pertain to species group structure. Emphasis on primates. One course. *Glander or Simons*

**145. Medical Anthropology.** Evolution and disease, theories of disease and healing; and factors influencing behavior in health and illness. One course. *Graedon*

**146. Cross-Cultural Perspectives on Health Care Delivery.** (Also listed as Nursing 146.) *Graedon*

**147, 148. Introduction to Islamic Civilization.** Prerequisite: consent of director of undergraduate studies. (Also listed as Interdisciplinary Course 162, 163.) Two courses. *Braibanti, Lawrence, and staff*

**150. Law and Anthropology.** Adjudication and dispute settlement in primitive and small-scale societies. Western legal developments compared with those of new nations. American legal problems from the anthropological perspective. Prerequisite: Anthropology 94. One course. *Staff*

**155. Anthropological Approaches to Religion.** A cross-cultural perspective on the means by which religion orders experience, orients behavior, and promotes and stabilizes conflict and change. Topics include symbolism, ritual, myth, witchcraft, and millenarianism. One course. *Pessar*

**161. Hunting and Gathering Societies.** Demography, subsistence, ecological adaptation, marginalization, band organization, kin relations, interband relations, political leadership, dispute settlement, property ownership and distribution, division of labor, women's role, and child socialization. One course. *Quinn*

**162. Cultural Ecology.** Human interaction with the environment and the effect of ecology on social structure. Prerequisite: Anthropology 94. One course. *Smith*

**164. Peasantry and Peasant Movements.** The genesis of peasant movements. Forms of peasant protest and its role in the economic, political, and ritual life of societies. Case studies from Western and Eastern societies, past and present. Prerequisite: Anthropology 94. One course. *Fox or Smith*

**165. Psychological Anthropology.** Anthropological contributions to sociobiology, socialization theory, social psychology, and cognitive science in the effort to understand human nature. One course. *Quinn*

**166. Introduction to Archaeology: Man and Culture.** Modern methodology and analysis; theories of cultural evolution; survey of world prehistory with an exploration of the uses of ethnographic analogy. Prerequisite: Anthropology 93 or 94. One course. *Hammond*

**167. Prehistoric Technology.** Procurement of raw materials, manufacturing of objects, and the usage of these objects in archaeological context. One course. *Hammond*

**168. Beginnings of Civilization.** Cultural developments from the beginning of agriculture to the rise of civilization in Africa, Mesoamerica, Peru, India, Southwest Asia, and China, using archaeological and ethnographical examples. One course. *Hammond*

**170. Economic Anthropology.** Primitive, peasant, and world-system economics, and theories that both accept and challenge the neoclassical framework.

Topics include primitive and complex modes of production, exchange, and marketing; the rise and organization of the capitalist world economy, and the transformation of precapitalistic modes of production and exchange in the modern world. Prerequisites: Anthropology 94 or consent of instructor. One course. *Quinn or Smith*

**185T, 186T. Junior Tutorial.** Prerequisites: Anthropology 94 and consent of the Director of Undergraduate Studies. Half-course or one course. *Staff*

**193. Independent Study.** Directed reading and research. Open only to qualified students in the senior year, with consent of the Director of Undergraduate Studies. One course. *Staff*

**195S, 196S. Senior Seminar.** Prerequisites: Anthropology 94 and any 100-level course in anthropology, as well as consent of the Director of Undergraduate Studies. Half-course or one course. *Staff*

### For Seniors and Graduates

**211S. Ethnography of Communication.** Verbal and nonverbal communication from the sociolinguistic perspective. Emphasis on synchronic and diachronic aspects of communication as related to the development of sociolinguistic theory. Prerequisite: Anthropology 107 or consent of instructor. One course. *Apte or O'Barr*

**220S. Society and Culture in India.** The basic features of Indian cultures and societies from an anthropological perspective. The impact of selected technological and social changes upon the individual, caste, and community. Prerequisite: Anthropology 94 or consent of instructor. One course. *Apte or Fox*

**222. Topics in African Anthropology.** Research problems illustrated through ethnographic studies of African societies. Topic will change each semester. One course. *O'Barr*

**234S. Political Economy of Development: Theories of Change in the Third World.** (Also listed as History 234S, Political Science 234S, and Sociology 234S.) One course. *Bergquist, Pessar, Portes, Smith, and Valenzuela*

**242S. Topics in Prehistory.** Anthropological issues derived from archaeological and early historical investigations. Topic will change each semester. Prerequisite: Anthropology 166, or equivalent. One course. *Hammond*

**243S. Theory and Method in Archaeology.** Techniques of geochronology, environmental reconstruction, sociocultural reconstruction, and statistical analyses applied to problem areas in archaeology. Prerequisite: Anthropology 166 or consent of instructor. One course. *Hammond*

**244S. Primate Behavior.** Social behavior of prosimians, monkeys, and apes and the evolutionary development of primates. One course. *Glander*

**245. Functional and Evolutionary Morphology of Primates.** History and functional significance of locomotor and feeding adaptations, craniofacial morphology, sense organs, and reproductive systems in primates, including *Homo sapiens*. Prerequisite: Anthropology 132 (Anatomy 231) or equivalent, or consent of instructor. Not offered in 1979–1980. (Also listed as Anatomy 238.) One course. *Cartmill, Hylander, or Simons*

**246. The Primate Fossil Record.** Evolution of man and other primates as inferred from fossil remains. Prerequisite: a course in human evolution or consent of instructor. One course. *Cartmill, Kay, or Simons*

**249S. Topics in Economic Anthropology.** Current research problems. Topic will change each semester. Prerequisite: Anthropology 94 or consent of instructor. One course. *O'Barr, Quinn, or Smith*

**251. Ethnography of Humor.** Examination of theoretical framework, research methods, and data collection techniques for the analysis of humor with the goal of discerning normative behavioral patterns, expectations regarding social roles, interpersonal relationships and social institutions, and the nature of ideologies and world views, within and across cultures. Prerequisite: Anthropology 94 or consent of instructor. One course. *Apte*

**258S. Symbols in Society.** Symbolic action and expressive culture among tribal, peasant, and industrial societies. Approaches emphasized are functionalism, symbolic interaction, structuralism, and cultural interpretation. One course. *Pessar*

**267. Cognitive Anthropology.** Culturally shared systems for categorizing, decision making, information processing, and performing other cognitive tasks. Prerequisite: Anthropology 165 or consent of instructor. One course. *Quinn*

**270. Ethnographic Field Methods.** Research strategies and field work techniques. One course. *Quinn*

**271. Methods of Data Analysis.** Quantitative analysis of anthropological data. One course. *Quinn*

**275S. Rank, Power, and Authority in Preindustrial Societies.** Social, economic, and political stratification in specific societies in Oceania, Africa, and the New World. Prerequisite: major in anthropology or graduate standing. One course. *Fox or Smith*

**276S. Topics in Kinship.** Current research problems. Topic will change each semester. One course. *Quinn*

**277. Class, Ethnicity, and Public Policy.** (Also listed as Public Policy Studies 275.) One course. *Stack*

**278S. Topics in Political Anthropology.** Current research problems. Topic will change each semester. Prerequisite: Anthropology 134 or consent of instructor. One course. *O'Barr, Pessar, or Quinn*

**280S, 281S. Seminar in Selected Topics.** Special topics in methodology, theory, or area. Prerequisite: consent of instructor. Two courses. *Staff*

**282S. Seminar on Canada.** Prerequisite: consent of the director of undergraduate studies. Counts for the major only with approval of Director of Undergraduate Studies. (Also listed as Interdisciplinary Course 282S.) One course. *Staff and visitors*

**291, 292. Anthropological Theory.** Theoretical, methodological, and comparative issues. Prerequisite: consent of instructor. Two courses. *Fox or Quinn*

## ANTHROPOLOGY COURSES BY FIELDS

Anthropology courses for undergraduates are offered in three fields, as noted below. Students majoring in anthropology are expected by the time of their graduation to have completed a concentration in one of the three subfields.

**Social-Cultural Anthropology.** Core courses: Anthropology 105, 134, 137, 155, 162, 165, 170. Courses on Major World Areas: Anthropology 123, 124, 125, 126, 127, 129, 141, 142, 149, 220, 222. More Specialized Courses: Anthropology 104, 107,



114, 115, 116, 117, 119, 130, 133, 135, 139, 145, 146, 150, 161, 164, 185, 186, 195, 196, 211, 234, 249, 251, 258, 267, 270, 271, 275, 276, 277, 278, 280, 281, 282, 291, 292.

Physical Anthropology. Anthropology 132, 143, 144, 244, 245, 246.

Archaeology. Anthropology 166, 167, 168, 242, 243.

## DEPARTMENTAL MAJOR

At the present time, the A.B degree is offered with a major in anthropology. The B.S. degree may be available for students specializing in certain areas in the future.

*Major Requirements.* Eight courses in the department, two of which must be 93 and 94. Concentration in one of three subareas of the discipline is required and is accomplished by selecting at least three courses from the designated courses in one of three subfields. The remaining three courses may be selected from other departmental offerings either in the subfield of concentration or other subfields.

Subfields of concentration in the department are social-cultural anthropology; physical anthropology; and archaeology.

*Social-Cultural Anthropology Concentration.* At least three courses distributed as follows: at least two courses from the list of core courses in social-cultural anthropology and at least one course from the list of courses dealing with the cultures and societies of a major world area.

*Physical Anthropology Concentration.* At least three courses selected from the departmental offerings in physical anthropology, one of which must be 132.

*Archaeology Concentration.* At least three courses selected from the departmental offerings in archaeology, one of which must be 166.

*Suggested Work in Related Disciplines.* Related courses in other departments are strongly advised. Each student's adviser will recommend a program of related work in other disciplines which complements the student's concentration and interests in anthropology.

*Recommended Courses in Anthropology Beyond Basic Requirements.* Although an anthropology major consists of only eight required courses, majors are encouraged to consider taking additional courses both within their concentration and elsewhere in the department. The breadth of the discipline makes this desirable.

*Honors.* Qualified majors are encouraged to participate in special work leading to graduation with distinction in anthropology. (See the section on honors in this bulletin for general requirements.) Any major with a *B+* average in anthropology courses and with a *B* average in all courses is eligible. Students who desire to undertake honors work should request a member of the anthropology faculty to recommend their names to the Director of Undergraduate Studies. To receive departmental honors a major must complete a paper involving significant independent research or scholarship and pass an oral examination on the paper conducted by an appointed committee of faculty members, at least two of whom should be in anthropology. Normally, students will prepare their papers over the course of the senior year working in close collaboration with their committees and receiving on the average two course credits in independent study for the work.

## Arabic

For courses in Arabic, see *Asian and African Languages*.

## Art

Professor Spencer, *Chairman and Director of Undergraduate Studies*; Professors Sunderland and Markman; Associate Professor Stars; Assistant Professors Connolly,

Goffen, Kinkead, and Pratt; Instructor Smullin; Part-time Lecturer van Dijk; Part-time Instructors Menapace, S. Pratt, and White

## HISTORY OF ART

The history of art is the study of works of art in their historical context. Since works of art speak directly, without the intermediary of language, the curriculum is designed to develop critical analysis and interpretation. Courses move from the general introductory level to more complex problems at the advanced level.

**62. Introduction to the History of Art.** Architecture, painting, and sculpture from antiquity to the present. Introduction to methods of historical analysis. One course. *Staff*

**67. Introduction to Spanish Art.** Iberian through the modern period. One course. *Kinkead*

**131. Art of the Hellenic World.** Preliminary treatment of archaeological material from the Aegean, the geometric, and orientalizing periods, followed by the architecture, sculpture, and vase paintings of ancient Greece from archaic through Hellenistic times. One course. *Markman*

**132. Roman Art.** The archaeological background for the formation of the Roman style as derived from Etruscan, Greek, and indigenous Italian sources; followed by the architecture, sculpture, and painting from the early Republic to the end of the Empire in Italy and in the provinces. One course. *Markman*

**133. Medieval Architecture.** A survey of Christian architecture in the Near East, the Balkans, Russia, and Western Europe from the beginnings of the medieval style in the late classical period to its disintegration in the fifteenth century. (Also listed under Medieval and Renaissance Studies.) One course. *Sunderland*

**134. Medieval Painting and Sculpture.** A study of painting, including mosaics, manuscripts, stained glass, and sculpture in Western Europe from the late classical period through the fourteenth century. (Also listed under Medieval and Renaissance Studies.) One course. *Sunderland*

**135. Art of Northern Europe in the Fifteenth and Sixteenth Centuries.** A Survey of the art of the "Northern Renaissance," with emphasis on the Netherlandish schools. (Also listed under Medieval and Renaissance Studies.) One course. *Kinkead*

**136. Fourteenth-Century Italian Art.** Painting and sculpture in Italy, with emphasis on Pisano, Duccio, and Giotto and the crisis of the Black Death. One course. *Goffen*

**137. Fifteenth-Century Italian Art.** Painting, sculpture, and architecture from Masaccio, Donatello, and Brueleschi to Leonardo. Emphasis on the art of Florence. (Also listed under Medieval and Renaissance Studies.) One course. *Goffen or Spencer*

**138. Sixteenth-Century Italian Art.** Painting and sculpture in Rome and Florence: Michelangelo, Raphael, Leonardo. The rise and diffusion of Mannerism: Pontormo to Tintoretto. (Also listed under Medieval and Renaissance Studies.) One course. *Spencer or Goffen*

**139. Venetian Art: Fifteenth Century to the Eighteenth Century.** Painting, sculpture, and architecture with emphasis on Bellini, Gioreione, Titian, Tintoretto, Veronese, Palladio, and Tiepolo. One course. *Goffen*

**140. Northern Baroque Painting.** Seventeenth-century Flemish and Dutch painting, with emphasis on the art of Rubens and Rembrandt. One course. *Kinkead*

**141. History of American Architecture.** Predominant trends in building after the American Revolution with concentration on the years 1850 to the present. One course. *Staff*

**142. American Art.** The visual arts in America from the sixteenth century to the present, with emphasis on painting, sculpture, and the decorative arts. One course. *Connolly*

**144. Renaissance and Baroque Architecture.** A study of the development of Renaissance architecture in Italy from its beginnings in the fifteenth century in the works of Brunelleschi to its flowering in the seventeenth-century Baroque works of Bernini and Borromini; along with a consideration of the spread of Italian Renaissance forms to northern Europe in the sixteenth century and its development into a Baroque style in the seventeenth century. (Also listed under Medieval and Renaissance Studies.) One course. *Sunderland*

**145. Italian Baroque Art.** A study of seventeenth-century painting, sculpture, and architecture. One course. *Kinkead*

**146S. Recent Interpretations of Contemporary Art.** The appraisal of critical art historical issues through the study and discussion of the visual arts and their criticism since World War II. Prerequisite: consent of instructor. One course. *Connolly*

**147. Painting and Sculpture in the Eighteenth and Nineteenth Centuries.** An investigation of the development of painting from the final stages of the Baroque in the eighteenth century to the period of the Impressionist movement in the last decades of the nineteenth century. One course. *Sunderland or Connolly*

**148. Modern Painting and Sculpture: 1863 to 1905.** The rise of the anti-academic movements of Impressionism, Divisionism, Symbolism, and the Art Nouveau. Emphasizes Manet, Van Gogh, Gauguin, Seurat, and Cezanne. Prerequisite: Art 62. One course. *Connolly*

**149. Pre-Columbian Art and Archaeology.** Architecture, sculpture, pottery, and other arts of the indigenous civilizations in Mexico, Central America, and the Andean region of South America before the Spanish conquest. One course. *Markman*

**150. Latin American Art.** Architecture, painting, sculpture, and other arts. Emphasis on the architecture of the colonial period. One course. *Markman*

**165. Painting and Sculpture: 1905 to the Present.** Evolution and interaction of major European and American movements. Prerequisite: Art 148 or consent of instructor. One course. *Staff*

**191, 192. Independent Study.** Directed reading and research. Open only to qualified students in the junior year, by consent of the Director of Undergraduate Studies. Two courses. *Staff*

**193, 194. Independent Study.** Directed reading and research. Open only to qualified students in the senior year, by consent of the Director of Undergraduate Studies. Two courses. *Staff*

### For Seniors and Graduates

**233. Early Medieval Architecture.** The development of religious architecture from the time of Constantine to the end of the First Romanesque style in the third

quarter of the eleventh century. (Also listed under Medieval and Renaissance Studies.) One course. *Sunderland*

**238S. Studies in Italian Renaissance Art.** Specific problems dealing with iconography, style, or an individual master from ca. 1300 to 1600. (Subject varies from year to year.) Prerequisite: consent of instructor. One course. *Goffen*

**240. Spanish Baroque Painting.** Development of seventeenth-century painting in Spain, with emphasis upon the Schools of Seville and Madrid. Prerequisite: consent of instructor. One course. *Kinkead*

**244. Problems in Nineteenth-Century Art.** One course. *Connolly*

**249. Problems in Pre-Columbian Art and Archaeology.** Architecture, sculpture, and other arts of the indigenous civilizations in Mexico, Central America, and the Andean region. Prerequisite: consent of instructor. One course. *Markman*

**250. Problems in Latin American Art.** Architecture, painting, sculpture, and other arts with emphasis on colonial architecture of Central America. Open to seniors who have a reading knowledge of Spanish and/or have had courses in Latin American history, economics, or literature. One course. *Markman*

**254. Problems in Modern Architecture.** A particular movement, master, or idea studied as a problem in criticism and methodology; influence on design and building. Prerequisite: consent of instructor. One course. *Staff*

**257. Problems in Modern European Art.** Selected topics in twentieth-century art, with emphasis on major movements of masters. Prerequisite: consent of instructor. One course. *Staff*

**291S. Methods in Art History.** Various approaches to the study of works of art, including connoisseurship, iconology, and stylistic analysis. Open to art majors and others by consent of instructor. One course. *Spencer*

**293, 294. Special Problems in Art History.** Individual study and research. Two courses. *Staff*

## DESIGN

**53. Drawing.** Directed approaches to practice in life drawing and in the expression of graphic concepts. Prerequisite: consent of instructor. One course. *S. Pratt and Smullin*

**54. Two-Dimensional Design.** Experiments in form and color, with work from observation. Introduction to color theory in painting and two-dimensional media. Prerequisite: Art 53 and consent of instructor. One course. *S. Pratt*

**56S. Three-Dimensional Design.** An introduction to studio exploration of sculpture. Visual experience in an exploration of form: from point, line, and place to space, mass, and time. Perceptual, structural, analytical, synthetic, and fantastic approaches. Prerequisite: Art 53 and consent of instructor. One course. *Smullin*

**151, 152. Photography.** Emphasis on interaction of technique, perception, and communication in making and responding to photographic images. Some work with view cameras furnished by the department; students must provide own hand camera. Prerequisites: submission of portfolio; Art 53 and consent of instructor. Two courses. *Menapace*

**153, 154. Painting.** Studio practice in painting with individual and group criticism and discussion of important historic or contemporary ideas. Prerequisites: Art 54 (or equivalent) and consent of instructor. Two courses. *V. Pratt*



**155, 156. Advanced Drawing and Color.** Work from life or in formal modes, with emphasis on personal development, through individual and group criticism and discussion. Prerequisites: Art 53 and 54 and consent of instructor. Two courses. *V. Pratt*

**159, 160. Printmaking.** Wood engraving, block printing, copperplate engraving, etching, aquatint, and drypoint. Prerequisites: Art 53-54 and consent of instructor. Two courses. *White*

**161, 162. Sculpture.** Realistic modeling in clay from human model. Work in abstract modes. Introduction to casting, carving, and welding. Second semester: independent problems. Prerequisite: Art 56 and consent of instructor. Two courses. *Smullin*

**164. Ceramics.** Design, production, and conceptualization of three-dimensional forms. One lecture and four studio hours each week. One course. *Stars*

**171, 172. Advanced Sculpture.** Prerequisites: Art 161 and 162. Two courses. *Smullin*

**173, 174. Advanced Painting.** Prerequisites: Art 153 and 154 and consent of instructor. Two courses. *V. Pratt*

**181, 182. Individual Project.** Independent work open to highly qualified seniors on recommendation of the instructor and invitation of the department. Two courses. *Staff*

## ELECTIVE FOR ART MAJORS

**119. Fine Arts Photography Laboratory.** History and development of photography as documentation and art; use of materials, techniques, laboratory, and studio practice. Open only to art majors. A fee of \$25 will be charged, payable upon notification from the Bursar's office at the beginning of the semester. Half-course. *van Dijk*

## DEPARTMENTAL MAJOR

The student will elect a sequence of courses emphasizing either the history of art or design. The department offers work leading to graduation with distinction. See the section on honors in this bulletin.

### Major in History of Art

*Prerequisites.* Art 62 or its equivalent and Art 291S.

*Major Requirements.* In addition to the prerequisites, at least one course in five of the six major periods in western European art. A reading knowledge of a foreign language is strongly recommended. Students contemplating graduate study should have a reading knowledge of at least two foreign languages, one of which should be German.

### Major in Design

*Prerequisites.* Art 62 and one other art history course; Art 53 and 54.

*Major Requirements.* Five studio courses exclusive of Art 53 and 54.

*Studio Fees.* To cover materials supplied in design courses, a fee of \$40 per semester for all courses will be charged, payable upon notification from the Bursar's office at the beginning of each semester.

## Asian and African Languages

Major programs are not offered in Asian and African Languages. Interested students are encouraged, however, to consider the major in Comparative Area Studies.

### ARABIC

**1, 2. Elementary Arabic.** Understanding, speaking, reading, and writing Arabic. Language laboratory. Two courses. *Siddiqi and staff*

**63, 64. Intermediate Arabic.** Concentration on written and spoken language. Two courses. *Staff*

### CHINESE

**1, 2. Elementary Chinese.** Introduction to speaking, understanding, reading, and writing Modern Standard Chinese (Mandarin, or *putonghua*, based on the Peking dialect). Four weekly meetings and language laboratory. Two courses. *Kunst*

**63, 64. Intermediate Chinese.** Reading, oral practice, language laboratory. Two courses. *Kunst*

**135, 136. Introduction to Modern Chinese Literature.** Prerequisite: Chinese 63, 64, or equivalent. Two courses. *Kunst*

**141. Chinese Literature in Translation.** Masterpieces of traditional Chinese poetry, fiction, and drama. One course. *Kunst*

**145. Introduction to Classical Chinese.** Language of Chou dynasty literary and philosophical works of the fourth-third centuries B.C., presented through readings in original texts, as well as selected poetry of later periods. Conducted in English. No previous knowledge of Chinese required. One course. *Kunst*

### HINDI-URDU

**171, 172. Studies in Indian Literatures.** Readings in translation. First semester: classical Indian literary traditions. Second semester: literatures from Indian languages, including novels, poetry, and drama, with special reference to European literary influences. Two courses. *Siddiqi*

**173, 174. Literature and Revolution.** Post-World War I literatures of Asia and Africa in the context of contemporary sociopolitical revolutions. Readings in English. Two courses. *Siddiqi*

**181, 182. Intensive Elementary Hindi-Urdu.** Four hours of classroom work; two hours of language laboratory drill. Concentration on the acquisition of conversational ability in Hindi-Urdu, with a grammar and vocabulary basic to both Hindi and Urdu. Introduction to the Devanagari script and the reading of graded texts. Two courses. *Siddiqi*

**183, 184. Intensive Intermediate Hindi-Urdu.** Four hours of classroom work, two hours of language drill. Advanced conversation in Hindi-Urdu reading and composition. Prerequisite: elementary Hindi-Urdu. Two courses. *Siddiqi*

**185, 186. Advanced Hindi and Urdu Reading and Composition.** An introduction to scholarly and literary Hindi and Urdu poetry and prose and extensive practice in composition. Prerequisite: Hindi-Urdu 183, 184, or equivalent. Two courses. *Siddiqi*

## JAPANESE

**1, 2. Elementary Japanese.** Introduction to speaking, understanding, reading, and writing. Four weekly meetings and language laboratory. Two courses. *Kunst*

**63, 64. Intermediate Japanese.** Classroom and language laboratory practice on spoken and written patterns; reading and discussion. Two courses. *Kunst*

**155, 156. Introduction to Modern Japanese Literature.** Prerequisite: Japanese 63, 64, or equivalent. Two courses. *Kunst*

**161. Modern Japanese Fiction in Translation.** Readings of twentieth-century Japanese novels and short stories. One course. *Kunst*

## PERSIAN

**1, 2. Elementary Persian.** Introduction to spoken and literary Persian: understanding, speaking, reading, and writing. Two courses. *Siddiqi*

## SWAHILI

**1, 2. Elementary Swahili.** Three hours of classroom work, plus language laboratory drill. Two courses. *Houpe*

**63, 64. Intermediate Swahili.** Three hours of classroom work and language laboratory drill. An advanced study of language and Swahili culture and literature. Two courses. *Houpe*

## Astronomy

For courses in Astronomy, see *Physics*.

## Biology

**11-12. Principles of Biology.** A two-semester introduction to the discipline open only to freshmen and sophomores who have had no more than one year of biological science in high school. (Entering freshmen will be given priority.) Lectures and laboratories. Two courses. *Staff*

**11P, 12P. Preceptorials.** Elective preceptorials for students enrolled in Biology 11, 12. *Staff*

**14. Principles of Biology.** A one-semester introduction to the discipline open to freshmen with at least one year of biological science in high school and to all upperclassmen. Lectures and laboratories. (Offered in fall and spring terms.) One course. *Staff*

**14P. Preceptorial.** Elective preceptorial for students enrolled in Biology 14.

The above offerings, 11-12 and 14, may not both be taken for credit; either is an acceptable prerequisite for advanced courses. See other courses listed under *Botany* and *Zoology*.

## Interdepartmental Concentration

An interdepartmental program (e.g., in cell and molecular biology, physical biology, and marine biology) may be pursued instead of a departmental major. The appropriate Director of Undergraduate Studies in botany or zoology will arrange administrative responsibility for such programs.

# Botany

Professor White, *Chairman*; Professor Philpott, *Director of Undergraduate Studies*; Professors Anderson, Antonovics, Billings, Boynton, W. Culberson, Hellmers, Johnson, Naylor, Stone, Strain, and Wilbur; Associate Professors Barber, Knoerr, and Searles; Assistant Professors Christensen, Ramus, and Siedow; Lecturer C. Culberson

See *Biology* for a listing of introductory courses.

The *L* suffix on a course number indicates that the course includes a laboratory. Note that in some courses the laboratory is optional, and a student may register for these courses with (e.g., Botany 135L) or without (e.g., Botany 135) the laboratory.

**43. Ecology and Society.** Ecological concepts and their application to human society. Intended for students interested primarily in social sciences and humanities. One course. *Hellmers*

**51L. Culture and Propagation of Plants.** Principles of physiology, genetics, ecology, and taxonomy as applied to horticulture. Lectures, greenhouse and garden work, and field trips. Prerequisite: introductory college biology. One course. *Philpott*

**53. Introductory Oceanography.** Basic principles of physical, chemical, biological, and geological oceanography. Prerequisite: one course in a laboratory science. (Also listed as Geology 53.) One course. *Pilkey (geology) and Searles*

**75. Plants of the Southeast.** Survey of the flora, stressing biological and geological factors related to present day floristic and evolutionary patterns. One course. *Stone*

**90. Plants and Man.** The coevolution of agriculture and civilization; the invention of elite races of domesticated plants from wild species by artificial selection. The economic botany of the world's major crops. One course. *Antonovics, Culberson, or Naylor*

**103L. General Microbiology.** Classical and modern principles of the structure, physiology, and genetics of micro-organisms and their roles in human affairs. Prerequisite: one course in a biological science or consent of instructor. (Also listed as Microbiology 103L.) Fall. One course. *Johnson and Wheat (microbiology)*

**135. Evolutionary Systematics.** Speciation and phylogeny in plants and animals: geographic and reproductive isolation, breeding systems, hybridization, homology, convergence, and extinction; techniques of classification. Complements Evolutionary Mechanisms course. Prerequisite: introductory biology. (Also listed as Botany 235, Zoology 135, and Zoology 235.) One course. *Bailey (zoology), Lundberg (zoology), and Stone*

**135L. Evolutionary Systematics.** See Botany 135. Lectures and laboratory. One course. *Bailey (zoology), Lundberg (zoology), and Stone*

**141. Ecology and Humanity.** Fundamentals of ecology and their application in the conservation and use of global resources. Intended for students in the natural sciences, engineering, and nursing. One course. *Strain*

**142L. Systematics.** Principles of vascular plant taxonomy with practice in identification of local flora. Lectures, laboratories, and field trips. One course. *Wilbur*



**145L. Plant Diversity.** Major groups of the living plants, their evolutionary origins and phylogenetic relationships. Prerequisite: introductory biology. (Also listed as Botany 245L.) One course. *Culberson and White*

**146L. Ecology of Plants.** Principles of the relationships between plants and their environments. Structures and processes of ecosystems. Laboratory, lectures, and field trips. Prerequisites: introductory biology and one other course in biology. (Also listed as Botany 246L.) One course. *Billings, Christensen, or Strain*

**147L. Plant Ecology.** Principles of the relationships between plants and their environments. Emphasis on structures and processes of coastal plain ecosystems. Not open to students who have had Botany 146L. Prerequisite: introductory biology. (Offered alternate years.) (Also listed as Botany 247L.) (Given at Beaufort.) One and one-half courses. *Christensen*

**151L. Plant Physiology.** Principal physiological processes of plants, including respiration, photosynthesis, water relations, and factors associated with plant morphogenesis. Prerequisites: introductory college biology and one year of chemistry; organic chemistry is desirable. (Also listed as Botany 251L.) One course. *Siedow*

**160L. Plant Anatomy.** A comparative study of basic cell types, tissues, and organs of vascular plants. Correlation of anatomical information with pertinent literature, application of anatomy to problems in systematics and evolution, and the interrelationship between structure and function. Prerequisite: one year of biology or consent of instructor. (Also listed as Botany 260L.) One course. *White or Philpott*

**169L. Ecological Oceanography.** Dynamics of marine communities in the context of current ecological theory. Life history strategies, competition, predation, diversity, and stability, followed by detailed considerations of both benthic and pelagic communities. Students may not receive credit for both Zoology 103L and 169L. Prerequisites: introductory biology and introductory mathematics. (Also listed as Geology 169 and Zoology 169L.) (Given at Beaufort.) One course. *Sutherland (zoology)*

**180. Principles of Genetics.** Structure and properties of genes and chromosomes in individual organisms and in populations. Prerequisites: introductory biology, Chemistry 12, and Mathematics 31 or equivalents. (Also listed as Botany 280, Zoology 180, Zoology 280, and under the University Program in Genetics.) One course. *Antonovics, Boynton, and Gillham (zoology)*

**180L. Principles of Genetics.** See Botany 180. Includes laboratory instruction. Prerequisites: same as Botany 180. One course. *Antonovics, Boynton, Gillham (zoology), and Ward (zoology)*

**191, 192. Independent Study.** Directed reading and research. Open to qualified students in the junior and senior years by consent of department. (Also listed under Marine Sciences.) Credit to be arranged. *Staff*

**193T, 194T. Tutorial in Botany.** Credits to be arranged. *Staff*

**195S, 196S. Seminar in Botany.** Credits to be arranged. *Staff*

### For Seniors and Graduates

**203. Cytogenetics.** Organization and variation of chromosomes in relation to genetics and evolution. Meiotic behavior and variation, chromosomal rearrangements, polyploidy, karyotype evolution, and mechanisms of chromosomal changes. Prerequisite: one year of biology. One course. *Anderson*

**203L. Cytogenetics.** See Botany 203. Lectures and laboratories. One course.  
*Anderson*

**204L. Marine Microbiology.** The major groups of marine micro-organisms, their taxonomy, culture, physiology, and ecology. Prerequisite: a course in introductory biology or botany. (Given at Beaufort.) One and one-half courses.  
*Staff*

**207L. Microclimatology.** (Also listed as Forestry and Environmental Studies 204.) One course. *Knoerr*

**209L. Lichenology.** Morphology, systematics, and biological and ecological implications of the lichens. Collection and identification of specimens and the use of lichen chemistry in taxonomy. One course. *W. Culberson and C. Culberson*

**210L. Bryology.** Morphological, systematic, and ecological characteristics of mosses and liverworts. One course. *Anderson*

**211L. Marine Phycology.** Introduction to marine algae, systematics, morphology, physiology, and ecology. Field trips, laboratory, and lectures. (Also listed under Marine Sciences.) (Given at Beaufort.) One and one-half courses. *Searles*

**212L. Phycology.** Morphological and ecological characteristics of common freshwater and marine algae and principles of their classification. One course.  
*Searles*

**214L. Biological Oceanography.** (Also listed as Zoology 214L.) (Given at Beaufort.) One and one-half courses. *Barber*

**215. Phytoplankton.** Identification, taxonomy, morphology, growth, seasonal succession, vertical distribution, and migration of marine phytoplankton. Laboratory and field exercises. Prerequisite: introductory biology. (Given at Beaufort.) Spring. One course. *Ramus*

**216. Photosynthetic Physiology of Marine Plants.** Variations in photosynthetic mechanisms and their ecological consequences in seaweeds and seagrasses. Topics include light capture, carbon reduction pathways, carbon allocation, dark respiration, photorespiration, growth strategies, and competitive interaction. Analytical methodologies used in laboratory and field exercises. Prerequisites: introductory biology, organic chemistry, and physics or consent of instructor. (Given at Beaufort.) One and one-half courses. *Ramus*

**217L. Environmental Instrumentation.** (Also listed as Forestry and Environmental Studies 217.) Prerequisite: consent of instructor. One course. *Knoerr*

**218. Barrier Island Ecology.** Adaptation of plants to barrier island migration and other physical characteristics of the coastal environment. Major emphasis will be placed on management of barrier beaches from Maine to Texas and the impact of human interference with natural processes. Field studies. Prerequisite: course in general ecology. (Also listed as Forestry and Environmental Studies 218 and under Marine Sciences.) (Given at Beaufort.) One and one-half courses. *Godfrey*

**221L. Mycology.** Field and laboratory study of vegetative and reproductive structures of the fungi and slime molds. Methods of collection, isolation, propagation, and identification of the major orders as represented in local flora. Prerequisite: one year of biological science. One course. *Johnson*

**225T, 226T. Special Problems.** Students with adequate training may do special work in the fields listed below. Credit to be arranged.

1. Cytology; Bryology. *Anderson*
2. Genetics. *Antonovics*

3. Ecology. *Billings*
4. Phycology. *Ramus*
5. Genetics. *Boynton*
6. Ecology. *Christensen*
7. Lichenology. *Culberson*
8. Physiology. *Hellmers*
9. Bacteriology; Mycology. *Johnson*
10. Physiology. *Naylor*
11. Anatomy and Morphology of Vascular Plants. *Philpott*
12. Phycology. *Searles*
13. Systematics of Flowering Plants. *Stone*
14. Ecology. *Strain*
15. Anatomy and Morphology of Vascular Plants. *White*
16. Systematics and Taxonomy of Vascular Plants. *Wilbur*
17. Physiology. *Siedow*

**227. Introductory Biochemistry I: Intermediary Metabolism.** Chemistry of the constituents of proteins, lipids, carbohydrates, and nucleic acids and their metabolic interrelationships. Prerequisite: organic chemistry. (Also listed as Biochemistry 227.) One course. *Sage and Siegel (biochemistry)*

**228. Introductory Biochemistry II: Molecular Biology.** Metabolism of DNA and RNA: protein synthesis including regulatory aspects; and special topics in molecular biology. Prerequisite: Botany 227 or equivalent. (Also listed as Biochemistry 228.) One course. *Greenleaf, Webster, and staff (biochemistry)*

**233. Microbiology.** Introduction to bacteriology, virology, cell biology, and immunology. Structure, metabolism, and growth of bacteria; the properties of bacterial and animal viruses; and basic immunology. (Also listed as Microbiology 233.) One course. *Amos (microbiology), Burns (microbiology), Joklik (microbiology), or Willett (microbiology)*

**236S. Major Global Ecosystems.** Study of a single global ecosystem type; e.g., arctic and alpine systems, deserts, tropical rainforests, grasslands, or coniferous forests; including the roles and effects of primitive and modern peoples. Prerequisite: one ecology course. One course. *Billings*

**244L. Diversity of Plants.** Surveys major groups of living plants with emphasis on algae, bryophytes, and vascular plants. Field observations and collections stress coastal botany and provide a basis for independent projects. Not open to students who have had Botany 145L. Prerequisite: introductory biology. (Also listed under Marine Sciences.) (Given at Beaufort.) One and one half courses. *White*

**250L,S. Plant Biosystematics.** Descriptive and experimental procedures used to assess systematic implications of vascular plant evolution. Laboratory, discussion, and field oriented problems. Prerequisites: basic courses in systematics and genetics. One course. *Stone*

**252S. Plant Metabolism.** Physiochemical processes and conditions underlying the physiology of plants. Prerequisite: Botany 151 or equivalent; organic chemistry is recommended. One course. *Siedow*

**253. Advanced Plant Physiology.** Physiological consequences of physical principles as related to ion transport, water relations, and the interconversion of energy in plant cells. One course. *Naylor or Siedow*

**256. Physiological Role of Minerals and Water.** Availability, uptake, transport, and function of minerals and water in plant growth. Prerequisite: Botany 151L or equivalent. One course. *Hellmers*

**257S. Principles of Plant Distribution.** Interpretation of floristic and ecological plant geography. Prerequisites: Botany 146L or equivalent and a course in plant taxonomy. One course. *Billings*

**258. Physiology of Growth and Development.** Consideration of the internal factors and processes leading to the production of new protoplasm and its differentiation at the cellular, tissue, and organ level in plants. Lectures. Prerequisite: Botany 151L or equivalent; organic chemistry is recommended. One course. *Naylor*

**261. Photosynthesis.** Principles of plant photosynthesis: developmental, mechanistic, regulatory, and ecological aspects of the photosynthetic process. Prerequisite: Botany 151L or 251L. One course. *Naylor and Siedow*

**265. Physiological Plant Ecology.** The physiological approach to interpreting adaptation in plants, with emphasis on terrestrial seed plants. Prerequisites: Botany 146L and 151L or equivalents. One course. *Strain*

**265L. Physiological Plant Ecology.** See Botany 265. Lectures and laboratories. One course. *Strain*

**267L. Plant Community Ecology.** Concepts and methods of plant synecology. Introduction to the plant communities of North Carolina. Prerequisites: Botany 142L and 146L or equivalents, and consent of instructor. One course. *Christensen*

**283. Extrachromosomal Inheritance.** Genetics, biochemistry, and molecular biology of the organelles of eukaryotic cells, bacterial plasmids and episomes, and cellular symbionts. Emphasis on recent literature. Prerequisite: introductory genetics. (Also listed as Zoology 283 and under the University Program in Genetics.) One course. *Boynton and Gillham (zoology)*

**285S. Ecological Genetics.** Interaction of genetics and ecology and its importance in explaining the evolution, diversity, and distribution of plants and animals. Prerequisites: Botany 180 and 286 or their equivalents. One course. *Antonovics*

**286. Evolutionary Mechanisms.** Population ecology and population genetics of plants and animals. Fitness concepts, life history evolution, mating systems, genetic divergence, and causes and maintenance of genetic diversity. Complements Evolutionary Systematics course. Prerequisite: genetics. (Also listed as Zoology 286 and under the University Program in Genetics.) One course. *Antonovics and H. Wilbur (zoology)*

**287S. Quantitative Genetics.** Analysis of genetic variation in continuous traits. Models of continuous variation; genetic, environmental, and interaction components; genetic correlation; heritability estimation; selection response. Prerequisites: Botany 180 or equivalent and consent of instructor. (Also listed under the University Program in Genetics.) One course. *Antonovics*

**295S, 296S. Seminar.** Credit to be arranged. *Staff*

## MARINE LABORATORY

Botany 144L, 147L, 191, 192, 204L, 211L, 214L, 216L, and 218L are offered during the summer at the Duke University Marine Laboratory, Beaufort, North Carolina. The Department of Botany also participates in the spring semester program at the Marine Laboratory. See Marine Sciences, "Spring Courses at Beaufort," and consult the *Bulletin of the Marine Laboratory* for further information.



## THE UNIVERSITY PROGRAM IN GENETICS

Courses offered by the Department of Botany are an integral part of this interdepartmental program. Refer to the announcement in this bulletin under Genetics, the University Program, for descriptions of the other offerings.

### DEPARTMENTAL MAJOR

#### For the A.B. Degree

This degree program is the general liberal arts major program. Preprofessional students should elect the bachelor of science degree program.

*Prerequisites.* Introductory college biology or advanced placement in botany; two semesters of introductory chemistry (Chemistry 11-12) or advanced placement in chemistry; one semester of college mathematics or equivalent.

*Major Requirements.* A minimum of eight approved botany or closely related science courses in addition to prerequisites: at least five courses of the eight to be selected from the following: Botany 135L (evolutionary systematics) or 142L (systematics), 145L (plant diversity), 146L (plant ecology), 151L (plant physiology), 160L (plant anatomy), and 180 (principles of genetics). The Director of Undergraduate Studies must approve the selection of any science courses in related departments to be included in the eight courses for the major. Students' programs are tailored to their interests and plans for the future.

#### For the B.S. Degree

This degree program is recommended for all preprofessional students.

*Prerequisites.* Introductory college biology or advanced placement in botany; chemistry through organic; two terms of college mathematics or equivalent.

*Major Requirements.* Eight science courses as described under major requirements for the A.B. degree. A proficiency in reading German, which may be demonstrated by a B in German 181-182, or by passing either the FLETS or departmental German examination. One year of college physics or equivalent and a course in statistics are recommended. The emphasis in this preprofessional program will depend on the student's interests; each program is arranged on an individual basis.

### Interdepartmental Concentration

An interdepartmental program (e.g., in cell and molecular biology, physical biology, and marine biology) may be pursued instead of a departmental major. The appropriate Director of Undergraduate Studies in botany or zoology will arrange administrative responsibility for such programs.

### Honors

The department offers a program for graduation with distinction in botany. (See the section on honors in this bulletin for general requirements.) The program is usually initiated during the junior year and involves participation in at least two semesters of independent study (Botany 191, 192). The research paper which results from this experience is submitted to a departmental committee for review, followed by a discussion of the paper with the student. On the basis of the quality of the research report and the student's performance in the discussion of it, the committee may recommend the student for graduation with distinction in botany.

## Canadian Studies Program

Professor Preston, *Director and Chairman of the Committee of Canadian Studies*

The major and program in Canadian studies are designed to provide the student with an understanding of Canada and its problems and prospects.

## Major in Canadian Studies

1. A student wishing to pursue a major in Canadian studies must simultaneously follow another major to completion.
2. The prerequisites or corequisites required for the Canadian studies major are those required for the study of the student's other major.
3. Eight courses in the Canadian Studies Program must be taken for the major. The eight courses must include the Interdisciplinary Course 184 and seven other courses on Canada with full or significant content at the 200-level, or seminars, or special reading courses as approved by the Committee of Canadian Studies. No more than two of the courses listed below under courses with significant Canadian content may be included as half-courses to make up the eight required courses. No more than two courses required for the first major may be counted for the Canadian studies major.
4. To complete the major in Canadian studies a student must have also taken at least two full years of college-level French, or must possess an equivalent competence in the language as certified by the Department of Romance Languages.

## Program in Canadian Studies

In the Canadian Studies Program, completion of which is imprinted on the official record upon graduation, a student must take four courses with Canadian content or their equivalents (see below). These must include the interdisciplinary course, Canada: Problems and Issues of an Advanced Industrial State. It is recommended that students who do not have the equivalent of two years of college-level French should take French 181-182, Intensive French.

The program in Canadian studies may be taken as part of a major in history or political science, as a supplement to any other major, as part of an interdepartmental concentration, or under Program II.

## Courses in Canadian Studies

For a description of the courses consult listings under interdisciplinary courses and the specified departments.

**Courses with Full Canadian Content.** The following courses count as one full course in the four required for the Program in Canadian Studies and the eight required for the major in Canadian Studies:

Economics 52. Competition, Monopoly, and Welfare. *Tower\**  
Economics 116S. Economic Geography of Anglo-America *Tuthill*  
Economics 117. Economic Geography of Canada. *Tuthill*  
English 167. The Literature of English-Speaking Canada. *Armitage*  
French 135. The Contemporary Novel in French Canada. *Niess*  
French 141S. Survey of French-Canadian Literature Since World War II. *Niess*  
History 183S. Canada from the French Settlement to the Present. *Preston*  
History 187. Canada and the United States: Their Diplomatic Relations. *Davis*  
History 401. Commonwealth Seminar (when on a Canadian theme). *Duke faculty and visiting lecturers*  
Interdisciplinary 184. Canada: Problems and Issues of an Advanced Industrial State. (Also listed under economics, history, political science, and sociology.) *Preston, Duke faculty, and visiting lecturers*  
Interdisciplinary 282S. Seminar on Canada. *Staff and visitors*  
Political Science 110. The Canadian Polity. *Falcone*  
Political Science 195. Comparative Political Behavior in the United States and Canada. *Kornberg*  
Political Science 278. Canadian Political Behavior in the North American Context. *Kornberg*  
Sociology 194.I. Anti-Americanism in Canadian Society. *Smith*  
Sociology 298S. Comparative Political Behavior: United States and Canada. *Smith*

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\*Full Canadian content is given to Dr. Tower's section only

**Courses with Significant Canadian Content.** Two of these partial content courses may count as one full course among the four required for the program in Canadian studies and among the eight required for the major in Canadian studies, but no more than two partial content courses may be counted as full content courses in this way. All other partial content courses may count only for a half-credit for Canadian studies majors and programs.

Anthropology 117. Language, Law, and Politics. By special arrangement this course may be counted as a full content course. *O'Barr*

Anthropology 139. Anthropology of Complex Society. *Fox*

Anthropology 278S. Topics in Political Anthropology: Language and Law. *O'Barr*

Anthropology 281S. Special Topics in Anthropology: Comparative Ethnicity. *Fox*

Economics 115. Fundamentals of Geography. *Tuthill*

Economics 149. Microeconomic Theory. *Tower*

Economics 201S.1. Current Issues in Economics. *Davies*

Economics 265S. International Trade and Finance. *Tower*

Economics 287. Public Finance. *Davies*

French 125. French in the New World. *Hull*

Health Administration 322. Public Policy and Health Care. By special permission of department. *Falcone*

History 215. Diplomatic History of the United States. *Davis*

History 297S. The British Empire of the Nineteenth Century. *Preston*

History 298S. The Commonwealth in the Twentieth Century. *Preston*

Political Science 175. Legislatures-Party Systems in Western Democracies. *Kornberg*

Political Science 215. Comparative Political Elites in Western Democracies. *Clark*

Political Science 227. International Law. *Grzybowski*

Political Science 252S. Comparative Political Behavior and Socialization. *Staff*

Sociology 91S. Introductory Sociology. *Smith*

Sociology 170. The Sociology of Mass Communication. *Smith*

Sociology 196S.2. Sociology of Regional Nationalism in Advanced Societies. *Tiryakian*

A limited amount of financial aid for field work in Canada is available for undergraduates in the Canadian Studies Program.

## Chemistry

Professor Krigbaum, *Chairman*; Professor Wilder, *Director of Undergraduate Studies*; Professor Bonk, *Supervisor of Freshman Instruction*; Professors Chesnut, Jeffs, McPhail, Palmer, Poirier, Quin, Smith, Strobel, and Wells; Visiting Professor Dawson; Associate Professors Baldwin, Crumbliss, Henkens, Lochmüller, and Porter; Adjunct Associate Professors Ghirardelli, Pitt, and Spielvogel; Assistant Professors Luken and Shaw

The *M* suffix on some second-year courses denotes an enriched course presented in a more interactive format made possible by a marked reduction in class size. The required consent of instructor depends on the ability, preparation, and academic goal of the student. All curricular requirements may be satisfied by either *M* courses or courses lacking this suffix; the *M* suffix will not appear on the transcript.

**11, 12. Principles of Chemistry.** The introductory course for students who intend to take any additional chemistry courses other than Chemistry 103. Chemistry 11 emphasizes stoichiometry and atomic and molecular structures. Chemistry 12 emphasizes thermodynamics, chemical kinetics, synthesis, and analysis. Laboratory work includes both qualitative and quantitative analysis. Two lectures, one recitation, and one four-hour laboratory. Prerequisites: one year of high school chemistry or consent of instructor and qualification for Mathematics 31. Two courses. *Bonk and staff*

**41, 42. Chemical Fundamentals.** Generally paralleling Chemistry 11, 12 but enriched and discussion-oriented for selected able potential science majors. Three

class meetings and one four-hour laboratory. Prerequisite: consent of instructor. Chemistry 11 or 41 is a prerequisite for 42. Two courses. *Strobel and staff*

**103. Chemistry and Society.** Past discoveries and current challenges: a chemical background for decisions involving energy, radiation, pollution, drugs, food additives, vitamins, and pesticides. For students not majoring in a natural science or continuing in chemistry. Not open to students having credit for Chemistry 11 or equivalent. One course. *Staff*

**117. Inorganic Chemistry.** Bonding, structures, and reactions of inorganic compounds studied through physical chemical concepts. Three lectures. Prerequisite: Chemistry 161. One course. *Crumbliss, Palmer, and Wells*

**118S. Modern Synthetic Techniques in Inorganic Chemistry.** Introduction to techniques of synthesis and characterization of main group compounds and transition metal complexes. Anaerobic, high-vacuum, electrolytic, high-temperature, and photochemical syntheses; use of nonaqueous solvents and ion exchange. Characterization by modern spectroscopic methods. Two one-hour discussions and four laboratory hours. Prerequisite: Chemistry 117 or consent of instructor. One course. *Crumbliss, Palmer, and Wells*

**132. Quantitative and Instrumental Analysis.** Practice in advanced quantitative analysis and in the use of chemical instrumentation. Theoretical and applied aspects of chemical and instrumental methods. Three lectures and four and one-half laboratory hours. Prerequisite: Chemistry 161. One course. *Anderson, Lochmüller, and Strobel*

**151, 152. Organic Chemistry.** The structures and reactions of the compounds of carbon. First semester laboratory: techniques of separation and structure determination. Second semester: organic reactions and preparations. Three lectures and four laboratory hours. Prerequisite: Chemistry 12 or 42, or consent of the Director of Undergraduate Studies; Chemistry 151 or 151M is a prerequisite for 152. Two courses. *Baldwin, Jeffs, Porter, Quin, and Wilder*

**151M. Organic Chemistry.** Paralleling Chemistry 151, but stressing topics of importance for those who expect to major in chemistry. Three lectures and four laboratory hours. Prerequisites: Chemistry 12 or 42, and consent of instructor. One course. *Staff*

**152P. Preceptorial.** Preceptorial elective for students in Chemistry 152. Prerequisites: Chemistry 151M or consent of instructor. *Staff*

**155. Spectral and Structural Study of Organic Compounds.** Advanced study of spectral properties and structural aspects of organic compounds and the influence of structure on reactivity. Laboratory work emphasizes the systematic identification of compounds by their spectral aspects and by their chemical properties. Three lectures and four and one-half laboratory hours. Prerequisite: Chemistry 152. One course. *Porter and Quin*

**161, 162. Physical Chemistry.** Fundamentals of theoretical chemistry illustrated by selected laboratory experiments. Two lectures, an open resource room, and four laboratory hours. Prerequisites for 161: Chemistry 152, Physics 52, and Mathematics 32. Prerequisites for 162: Chemistry 161 and either Mathematics 103 or consent of instructor. Two courses. *Chesnut, Henkens, Krighbaum, Luken, McPhail, Poirier, and Smith*

**163. Advanced Physical Chemistry.** Continued development of the fundamentals of physical chemistry with emphasis on quantum mechanics and its applications. Prerequisite: Chemistry 162. One course. *Staff*



**175. Molecular Basis of Biological Processes.** A survey of the structures, reactions, and mechanisms of action of important biological molecules. Prerequisite: Chemistry 152. One course. *Shaw*

**176. Biophysical Chemistry.** The physical chemistry of and experimental methods employed in the study of biological macromolecules. Three lectures. Students may not receive credit for both Chemistry 176 and 196S. Prerequisites: Chemistry 161 and 175. Spring. One course. *Henkens*

**191, 192. Independent Study.** Supervised reading and research. Prerequisite: consent of the Director of Undergraduate Studies. Two courses. *Staff*

**193, 194. Independent Study.** Supervised reading and research. Prerequisite: Chemistry 191, 192 and consent of the Director of Undergraduate Studies. Two courses. *Staff*

**195S. Seminar.** Organic chemistry of biologically important compounds. Open to senior chemistry majors or by consent of instructor. One course. *Staff*

**196S. Seminar.** Selected topics in physical chemistry of biological macromolecules. Students may not receive credit for both Chemistry 176 and 196S. Prerequisites: Chemistry 161 and 175. One course. *Henkens and Shaw*

**197S. Seminar.** Special topics in biological chemistry (e.g., immunochemistry, molecular biology). Prerequisite: Chemistry 161; Chemistry 175 is recommended. One course. *Staff*

**198S. Seminar.** Topics from various areas of chemistry, changing each year. Open to senior chemistry majors or by consent of the instructor. One course. *Staff*

### For Seniors and Graduates

**201. Molecular Spectroscopy.** Selected spectroscopic methods in the study of molecular structure. Symmetry and group theoretical basis for selection rules, theories of magnetic and optical resonance, and interpretation of spectra; examples from both inorganic and organic chemistry. Three lectures. Prerequisite: consent of the Director of Undergraduate Studies. One course. *Staff*

**205. Structure and Reaction Dynamics.** Structure and mechanisms in organic and inorganic compounds, substitution reactions, linear free energy relations, and molecular rearrangements. Emphasis on the use of kinetic techniques to solve problems in reaction mechanisms. Three lectures. Prerequisite: consent of the Director of Undergraduate Studies. One course. *Staff*

**207. Principles of Thermodynamics, Diffraction, and Kinetics.** Three lectures. Prerequisite: consent of the Director of Undergraduate Studies. One course. *Staff*

**230. Environmental Oceanography.** Chemical, biological, and geological aspects of pollution in the marine environment. Anthropogenic effects upon natural marine processes on shore lines and shelves. Application of marine science to compatible utilization of marine resources. Prerequisite: consent of instructor; physical chemistry is recommended. (Also listed under Marine Sciences.) (Given at Beaufort.) One and one-half courses. *Staff*

**240. Chemical Oceanography.** Distribution, alteration, and transport of chemical species in the marine environment. Field cruises to gather samples for evaluating chemical processes in the ocean. Lectures, laboratory work, and field trips. Prerequisite: consent of instructor; physical chemistry is recommended.

(Also listed under Marine Sciences.) (Given at Beaufort.) One and one-half courses. *Staff*

**275, 276. Advanced Studies.** (1) Analytical chemistry; (2) inorganic chemistry; (3) organic chemistry; and (4) physical chemistry. Open to especially well-prepared undergraduates by consent of the Director of Undergraduate Studies. Two courses. *Staff*

## DEPARTMENTAL MAJOR

Two different baccalaureate degrees are offered. The A.B. degree permits greater flexibility in allowing students to select an area of concentration while satisfying the junior-senior small group learning experience requirements through seminar courses (option one) or through independent study in chemistry or related departments (option two). Of special significance is the area of biological chemistry; under the direction of the biological chemistry program coordinator, students may specialize in this area with either seminars (option three) or independent study in chemistry or related departments (option four) satisfying the junior-senior small group learning experience requirement. The B.S. degree program requires independent study and provides in-depth preparation for graduate study in chemistry.

### For the A.B. Degree

*Prerequisites.* Chemistry 11 and 12, or Chemistry 41 and 42, or advanced placement; Mathematics 31, 32; Physics 51, 52.

*Major Requirements.* Chemistry 132, 151, 152, 161, *plus* one of the following options:

1. Two of the following: Chemistry 117, 155, 162, 175, 195S, 196S, 197S, 198S.
2. One of the following: Chemistry 117, 155, 162; *plus* Chemistry 191 and 192, or the equivalent in a natural science, in mathematics, engineering, or in a basic science department in the School of Medicine.
3. Chemistry 175, 195S or 197S, and 196S.
4. Chemistry 175, 196S; and Chemistry 191 and 192 in a biochemically related area, or the equivalent in a biological area, biomedical engineering, or basic science department in the School of Medicine.

*Recommended.* Computer Science 51, Mathematics 103 (for options one and two); Chemistry 162 (for options three and four); two semesters of a foreign language or the equivalent. Students planning graduate study are advised to take these recommended courses and to consult with advisers regarding appropriate additional courses.

### For the B.S. Degree

*Prerequisites.* Chemistry 11 and 12, or Chemistry 41 and 42, or advanced placement; Mathematics 31, 32, 103; Physics 51, 52; two semesters of German or Russian, or the equivalent.

*Major Requirements.* Chemistry 117, 132, 151, 152, 155, 161, 162, 191, 192, and 163, or 207.

*Recommended.* Computer Science 51; Mathematics 104; Physics 161. Students planning graduate study in chemistry should consult with advisers regarding appropriate additional courses.

## Chinese

For courses in Chinese, see *African and Asian Languages*

## Classical Studies

Professor Oates, *Chairman*; Associate Professor Burian, *Director of Undergraduate Studies*; Professors Newton, Richardson, and Willis; Associate Professors Rigsby and Stanley; Assistant Professors Siddiqi and Younger; Visiting Professor Levy

### GREEK

**1-2. Elementary Greek.** A study of grammar and an introduction to reading. Two courses. *Willis or Burian*

**63-64. Intermediate Greek.** Introduction to Greek prose and poetry. First semester: Plato's *Apology of Socrates* and two dialogues. Second semester: two plays of Euripides. Two courses. *Rigsby or Levy*

**87, 88. Sight Reading in Greek Prose.** Readings from easy Attic prose writers. Prerequisite: one year of college Greek, or the equivalent, and consent of instructor. Two hours per week. Two half-courses. *Willis*

**117. Greek Prose Composition.** The character of the course is determined by the needs of the students enrolled. Half-course. *Willis*

**151S. Homer.** One course. *Stanley*

**152S. Lyric Poets.** One course. *Stanley*

**153S. Tragedy.** One course. *Willis or Burian*

**154S. Comedy.** One course. *Willis or Burian*

**155S. The Historians.** One course. *Rigsby*

**156S. The Orators.** One course. *Willis or Burian*

**181S, 182S. Greek Seminar.** An intensive introduction to the language and literature. Meets five times a week. Prerequisite: proficiency in another language. Two courses each. *Staff*

**191, 192. Independent Study.** Directed reading and research. (Open only to qualified juniors and seniors.) Two courses. *Staff*

**193, 194. Directed Research in Greek.** Research culminating in the writing of one longer or two shorter papers as partial fulfillment of the requirements for graduation with distinction. (Open only to senior majors.) Two courses. *Staff*

**198S, 199S. Senior Seminar in Greek.** The seminar will change according to the interests of the instructor. Two courses. *Staff*

### For Seniors and Graduates

**200. Graduate Reading.** (Open to qualified undergraduates by consent of instructor.) One course. *Staff*

**203. Homer.** The *Iliad* and *Odyssey*; the problems of language and structure in the epic; present state of Homeric scholarship. One course. *Levy or Stanley*

**205. Greek Lyric Poets.** Fragments of the early lyric poets; selected odes of Pindar and Bacchylides. One course. *Burian or Stanley*

**206. Aeschylus.** The *Oresteia*, with study of the form of *Agamemnon* and its place in the design of the trilogy. One course. *Willis*

**208. Sophocles.** The Theban plays; the structure and style of Sophoclean tragedy. One course. *Stanley or Burian*

**209. Euripides.** Representative tragedies in their political and philosophical context; analysis of dramatic form and texture. One course. *Stanley or Burian*

**210. Aristophanes.** Origin and development of Greek comedy; representative plays of Aristophanes. One course. *Burian*

**221. Early Greek Prose.** Greek prose in the fifth century from the Ionian scientists and logographers to Herodotus, Gorgias, Antiphon, and the Old Oligarch. One course. *Willis*

**222. Thucydides.** The *History*; Thucydides' historical method and style. One course. *Willis*

**223. Greek Orators I.** Early fourth-century rhetoric, including Andocides, Lysias, and Isocrates. One course. *Burian*

**224. Greek Orators II.** Aeschines' *Against Ctesiphon* and Demosthenes' *On the Crown* in the light of fourth-century political history and rhetorical development. One course. *Willis*

**225. Plato.** Selected dialogues and related passages illustrating the development of philosophical topics and stylistic motifs. One course. *Stanley or Burian*

**231. Hellenistic Poetry.** The principal lyric, elegiac, pastoral, and didactic poets of Alexandria; emphasis on Callimachus and Theocritus. One course. *Stanley*

## LATIN

**1-2. Elementary Latin.** Study of the structure of the language (inflexions, vocabulary, syntax, and pronunciation). Second semester: reading in prose and poetry. Two courses. *Staff*

**63. Intermediate Latin.** Selected prose. One course. *Newton*

**64. Intermediate Latin: Vergil.** Readings from the *Aeneid*; lectures on the epic and its history and Vergil's style and technique. One course. *Newton*

**87, 88. Sight Reading in Classical, Medieval, and Renaissance Latin.** Offered especially for students in fields other than classical studies who wish to maintain and refresh their Latin. Two hours per week. (Open to students enrolled in other courses in Latin only on the recommendation of their instructors.) (Also listed under Medieval and Renaissance Studies.) Two half-courses. *Staff*

**100.** This number represents one course credit for advanced placement which will be awarded for scores of 4 or 5 on one or more of the College Board Advanced Placement tests in Latin. One course credit may be earned by a score of 3 if the student successfully completes one further semester of Latin.

**105S. Ovid.** One course. *Newton*

**107S. Lyric Poets.** One course. *Richardson*

**111S. Elegiac Poets.** One course. *Richardson*

**112S. Comedy.** One course. *Richardson*



**117. Latin Prose Composition.** The course content is determined by the needs of the students enrolled. One course. *Staff*

**151S. Cicero.** One course. *Richardson*

**152S. The Historians.** One course. *Rigsby*

**153S. Petronius.** One course. *Richardson*

**154S. Lucretius.** One course. *Richardson*

**181S, 182S. Latin Seminar.** An intensive introduction to the language and literature. Meets five times a week. Open only to students who have achieved proficiency in another language. Two courses each. *Staff*

**191, 192. Independent Study.** Directed reading and research. Open to qualified juniors and seniors. Two courses. *Staff*

**193, 194. Directed Research in Latin.** Research culminating in the writing of one longer or two shorter papers as partial fulfillment of the requirements for graduation with distinction. Open only to senior majors. Two courses. *Staff*

**198S, 199S. Senior Seminar in Latin.** The subject will vary according to the interests of the instructor. Two courses. *Staff*

#### **For Seniors and Graduates**

**200. Graduate Reading.** Open to qualified undergraduates by consent of instructor. One course. *Stanley or Younger*

**201. The Verse Treatise.** The genre of didactic poetry; emphasis on Lucretius' *De Rerum Natura*, Vergil's *Georgics*, and Ovid's *Ars Amatoria*; attention to Cicero's *Aratea*, the *Astronomica* of Manilius, Horace's *Ars Poetica*, and Ovid's *Fasti*. One course. *Newton or Richardson*

**202. Roman Satire.** A survey of the genre with concentration on Horace, Juvenal, and Persius. One course. *Richardson*

**203. Epic: Vergil.** The *Aeneid*. One course. *Newton*

**204. Epic: Lucan and Statius.** The development of the Roman epic in the Silver Age. One course. *Richardson*

**209. Fragments of Early Latin.** The remains of Latin poetry of the third and second centuries B.C., from Livius Andronicus to Lucilius, with emphasis on the epic and drama of Ennius. One course. *Stanley*

**210. Lyric and Occasional Poetry.** Shorter verse forms: epigram, pastoral, song, and panegyric. One course. *Richardson or Burian*

**211. Roman Oratory I.** The literary history and criticism of Roman oratory. One course. *Richardson*

**212. Roman Oratory II.** A continuation of Latin 211. One course. *Staff*

**221. Medieval Latin I.** Latin literature of late antiquity, from Prudentius to the Carolingian Revival. (Also listed under Medieval and Renaissance Studies.) One course. *Newton*

**222. Medieval Latin II.** Literature in Latin from Charlemagne to the Renaissance. (Also listed under Medieval and Renaissance Studies.) One course. *Newton*

**250. Teaching Latin.** Objectives, methods, and problems; the study of textbooks, programs, and related materials. One course. *Staff*

## CLASSICAL STUDIES

**11. Greek Civilization.** The culture of the ancient Greeks from the Bronze Age to Alexander the Great: art, literature, history, philosophy, and religion. One course. *Rigsby*

**12. Roman Civilization.** The culture of the ancient Romans from their beginnings to Constantine: art, literature, history, philosophy, and religion. One course. *Rigsby*

**53. Greek History.** The political and intellectual history of the Hellenes from earliest times to the death of Alexander the Great. (Also listed as History 52.) One course. *Staff*

**54. Roman History.** The Roman Republic and Empire to the Council of Nicaea. (Also listed as History 54.) One course. *Staff*

**55. Greek Art and Archaeology.** Greek architecture, sculpture, and painting from the Bronze Age to the classical period. Study of objects in the Duke classical collection is included. One course. *Younger*

**56. Roman Art and Archaeology.** Rome's achievement in architecture and decoration, portraiture, and relief sculpture; from the Villanovans to the Antonine emperors. One course. *Younger*

**57S, 58S. Seminar in Classical Studies.** Aspects of the history, art, and literature of classical Greece and Rome. For freshmen and sophomores. Two courses. *Staff*

**61S. Athens.** The city from antiquity (ca. 1500 B.C.) to the present, concentrating on its monuments, self-image, and influence. One course. *Younger*

**62S. Pompeii.** The contributions of this city to our knowledge of ancient Roman life: its history, houses and temples, amusements, economy, and municipal administration. One course. *Richardson*

**63. The Epic.** Reading in translation of major epics from antiquity and the middle ages, such as *Gilgamesh*, Homer's *Iliad* and *Odyssey*, Vergil's *Aeneid*, and *Beowulf*. One course. *Burian*

**64. The Drama.** Reading in translation of Greek and Roman tragedies (Aeschylus, Sophocles, Euripides, Seneca) and comedies (Aristophanes, Menander, Plautus, Terence). (Also listed as Drama 64.) One course. *Burian*

**115. The Classical Tradition.** The notion of the "classical" from the creation of the archetype to the present. One course. *Burian*

**116. Greek Literature of the Roman Empire.** The intellectual world of late antiquity; readings in translation of pagan and early Christian writers. One course. *Rigsby*

**117. Ancient Mythographers.** Myth in classical and medieval writers from Hesiod to Boccaccio. (Also listed under Medieval and Renaissance Studies.) One course. *Newton*

**133. Early Greece and the Near East.** Political, social, and intellectual developments from the world of Homer to the Persian Wars. (Also listed as History 96.) One course. *Oates*

**134. The Athenian Empire.** Imperial democracy at Athens and its consequences for the *polis*. (Also listed as History 125.) One course. *Oates*

**135. Alexander the Great.** His career and the effects of his conquests. (Also listed as History 126.) One course. *Oates*

**137. The Roman Revolution.** Rome from the time of the Gracchi to the death of Augustus (14 A.D.). (Also listed as History 95.) One course. *Oates*

**138. The Decline and Fall of Rome.** Rome from the death of Commodus to the accession of Constantine. One course. *Oates*

**143. The Ancient Cities of Greece.** The *polis* as a physical and societal complex; urban problems and their solutions through the centuries. A different Greek city that has been extensively excavated and well published is chosen as representative of each century and examined in detail. One course. *Richardson*

**144. Ancient Cities: Rome and Her Colonies.** As a metropolis and a cosmopolis; the sources and uses of significant architectural and urbanistic ideas; the city government and organization of the megalopolis; Roman colonies throughout the Empire. One course. *Richardson*

**155. The Aegean Bronze Age.** Application of archaeological techniques and procedures to problems in the development of the Minoan and Mycenaean civilizations. One course. *Younger*

**156. Principles of Archaeology.** Ethics, techniques, and methods of archaeological research, including excavation and surveying of local sites. One course. *Younger*

**191, 192. Independent Study.** Directed reading and research. Open only to qualified juniors and seniors. Two courses. *Staff*

**193, 194. Directed Research in Classical Studies.** Research culminating in the writing of one longer or two shorter papers as partial fulfillment of the requirements for graduation with distinction. Open only to senior majors. Two courses. *Staff*

**195S, 196S. Junior Seminar in Classical Studies.** The subject will vary each year according to the interest of the instructor. Two courses. *Staff*

#### **For Seniors and Graduates**

**231S. Greek Sculpture.** One course. *Stanley*

**232S. Greek Painting.** One course. *Stanley*

**235S. Roman Architecture.** One course. *Richardson*

**236S. Roman Painting.** One course. *Richardson*

**253. Greece to the Orientalizing Period.** One course. *Rigsby*

**254. The Age of the Tyrants and the Persian Wars.** One course. *Oates*

**255. The Age of Pericles.** One course. *Oates*

**256. The Fourth Century through Alexander.** One course. *Oates*

**257. Social and Cultural History of the Hellenistic World from Alexander to Augustus.** One course. *Rigsby*

**261. The Roman Revolution, 146-30 B.C.** One course. *Oates*

**262. Rome under the Julio-Claudians.** One course. *Staff*

**263. From the Flavian Dynasty to the Severan.** One course. *Staff*

## DEPARTMENTAL MAJOR IN GREEK

*Prerequisite.* Greek 2 or equivalent.

*Major Requirements.* Six courses in Greek above the level of Greek 2. In addition, students will be required to pass an examination testing proficiency in Greek composition or to complete Greek 117.

*Related Work.* Greek majors normally take at least four semesters of Latin and are also encouraged to take course work in ancient history and/or archaeology. The nature and amount of related work, however, may vary with the student.

## DEPARTMENTAL MAJOR IN LATIN

*Prerequisite.* Latin 64 or equivalent.

*Major Requirements.* Six courses in Latin above the level of Latin 64. In addition, students will be required to pass an examination testing proficiency in Latin composition or to complete Latin 117.

*Related Work.* Latin majors normally take at least four semesters of Greek and are also encouraged to take course work in ancient history and/or archaeology. The nature and amount of related work, however, may vary with the student.

## DEPARTMENTAL MAJOR IN CLASSICAL STUDIES (ANCIENT HISTORY AND ARCHAEOLOGY)

*Prerequisites.* Classical Studies 11D, 12D; 51, 52; 53, 54; 55, 56; or 57S, 58S.

*Major Requirements.* Eight courses at the 100-level or above, including two courses of seminar or independent study, or a combination of these. Reading knowledge of Latin or Greek to the level of Latin 64 or Greek 64. Two courses in the ancient languages above that level may be counted toward the major.

Majors in either Greek or Latin who contemplate graduate work are reminded of the necessity for competence in both languages for all higher degrees and of the requirement for a reading knowledge of French and German.

Majors are eligible for nomination to a term of one semester during their junior year at the Intercollegiate Center for Classical Studies in Rome, of which Duke University is a founding member, at a cost comparable to that of a semester at Duke. Financial arrangements are made through the University, and students may apply for scholarship assistance. Courses in Greek, Latin, ancient history, and archaeology taken at the center are counted toward the major requirements. For further information, see section on study abroad.

The department offers work leading to graduation with distinction. See the section on honors in this bulletin.

## Comparative Area Studies

Associate Professor Bergquist, *Director*

The undergraduate major in comparative area studies offers a Bachelor of Arts degree to students interested in the interdisciplinary study of societies and cultures of a particular region of the world, while at the same time concentrating in an academic discipline. Students in the program are currently studying Latin America, Africa, the Middle East, Russia, South Asia, and East Asia. The major draws its offerings from existing courses taught by over forty Duke professors in a dozen cooperating departments. In addition to its Director, the program is administered by an advisory committee of faculty members representing the various areas and cooperating departments. Inquiries may be directed to Professor Bergquist, 102 West Duke.



## THE MAJOR

In consultation with the Director, students must identify their primary disciplinary and area focus. A student wishing to specialize in an area not indicated in the categories of courses that follow will be required to submit a proposed course of study to the advisory committee for approval. Selection of area and discipline is normally done by the end of the sophomore year.

A special feature of the major is provision for granting credit to students who wish, and who are qualified, to study abroad in the area of choice; or who undertake intensive summer language programs in the United States.

*Prerequisites.* Any two of the following introductory-level courses emphasizing comparative approaches: History 175D, 176D (The Third World and the West); Anthropology 94 (Elements of Cultural Anthropology); Religion 57 (Introduction to Religions of Asia); Political Science 92 (Comparative Politics). Four semester-courses of which two shall be in a language of the area, and the other two may be a continuation of the language or two of the following: literature of the area in translation, or general linguistics. The Director should be consulted for specific approval of language choice.

*Major Requirements.* Discipline courses: four semester-courses in a discipline (either social science or humanities). Area courses: four semester-courses in the geographic area of special interest, and two in another one of the areas included in the major. Seminar: in the senior year, one-semester interdisciplinary seminar, bringing together a number of major themes for comparative treatment.

The courses listed below may be taken for credit as area courses. Others may be selected with the approval of the Director. Courses in language instruction are not included in this list. For a complete description consult the listing under the appropriate department.

## AFRICA

Anthropology 125 (Peoples of the World: Africa); 222 (Topics in African Anthropology).

Afro-American Studies 150 (Third World Literature).

Economics 114 (Economic Geography of Africa); 214 (Geonomics: Geography and Contemporary Economics of Africa); 219 (Economic Problems of Underdeveloped Areas).

History 115, 116 (History of Africa); 117, 118 (European Imperialism and Colonialism); 195Y-196Y (Issues in the History of Tropical Africa); 255S-256S (Problems in African History).

Political Science 161 (Comparative Government and Politics: Africa); 163 (Women in Developing Societies); 171 (Race, Class, and Colonialism in Southern Africa); 280 (Comparative Government and Politics: Sub-Saharan Africa).

## EAST ASIA

Chinese 135, 136 (Introduction to Modern Chinese Literature); 141 (Chinese Literature in Translation); 145 (Introduction to Classical Chinese).

Economics 201S.9 (The Japanese Economy); 232 (Economic History of Japan).

History 141 (Man and Society in Traditional China); 142 (The Roots of Revolution); 143, 144 (History of Modern Japan); 177 (China since 1949: The People's Republic); 195G-196G (Nationalism and Communism in the Far East); 195S-196S (Processes of Development in Modern Japan, 1800 to the Present); 260 (Economic History of Japan).

Japanese 155, 156 (Introduction to Modern Japanese Literature); 161 (Modern Japanese Fiction in Translation).

Political Science 168 (Political Development in East Asia); 169 (Politics in Revolutionary China); 111 (Contemporary Japanese Politics); 149 (United States and East Asia); 212 (Japanese Foreign Policy).

Religion 141 (Religions of China and Japan); 149 (Buddha and Buddhism); 218 (Religion in Japan).

## LATIN AMERICA

Anthropology 124 (Peoples of the World: American Indian); 127 (Peoples of Mesoamerica).

Art 149 (Pre-Columbian Art and Archaeology); 150 (Latin American Art); 249 (Problems in Pre-Columbian Art and Archaeology); 250 (Problems in Latin American Art).

History 128 (The United States and Latin America); 131 (Mexico and the Caribbean from the Wars of Independence to the Present); 132 (Major South American Nations, 1850 to the Present); 155, 156 (Modern Latin America); 173, 174 (History of Spain and the Spanish Empire from Late Medieval Times to the Present); 195X-196X (Problems in Latin American History); 231S, 232S (Problems in the History of Spain and the Spanish Empire); 265S, 266S (Problems in Modern Latin American History).

Political Science 151 (Introduction to Latin American Politics); 152 (Authoritarianism and Revolution in Latin America); 253 (Comparative Politics and the Study of Latin America).

Spanish 107, 108 (Introduction to Spanish American Literature and Civilization); Spanish 155 (Spanish American Short Fiction); 157 (Latin American Literature); 158 (Spanish American Colonial and Nineteenth-Century Literature); 255, 256 (Modern and Contemporary Spanish American Literature).

Sociology 254 (Urbanization and Social Change).

## MIDDLE EAST

Anthropology 129 (Peoples of the World: Middle East).

History 188 (Middle East: 1789 to the Present).

Interdisciplinary Course 162, 163 (Introduction to Islamic Civilization).

Religion 57 (Introduction to Religions of Asia); 136 (Contemporary Jewish Thought); 147 (Mohammed and the Qur'an); 152 (Islamic Mysticism); 284 (The Religion and History of Islam).

## RUSSIA

Economics 293 (Soviet Economic History); 294S (Soviet Economic System).

History 119-120 (History of Socialism and Communism); 161-162 (History of Modern Russia); 201S-202S (Change in Prerevolutionary Russia); 261-262 (Problems in Soviet History); 195J-196J (History of International Socialism to the First World War); 195T-196T (Problems in the History of Russia before 1917).

Political Science 117 (Comparative Legal Systems); 162 (Comparative Government and Politics: Communist and Socialist Political Systems); 165 (Government and Politics of the Soviet Union); 166 (Soviet Foreign Relations).

Slavic Languages and Literatures 101-102 (Russian Literature and Culture Through the Nineteenth Century); 124 (Masters of Russian Short Fiction); 174 (The Poles: Literature and Culture, 1940-1970); 188 (Solzhenitsyn and the World of Soviet Concentration Camps); 201-202 (The Novelists of Nineteenth-Century Russia); 207 (Soviet Literature and Culture).

## SOUTH ASIA

Anthropology 101-102 (Introduction to the Civilization of Southern Asia); 134 (Political Anthropology); 141 (Peoples of the World: Southeast Asia); 142 (Peoples of the World: South Asia); 220 (Society and Culture in India).

Hindu-Urdu 171-172 (Studies in Indian Literatures); 173-174 (Literature and Revolution).

Education 218 (Comparative and International Education: Developing Societies); 219 (Comparative and International Education: South Asia).

History 193-194 (Introduction to the Civilizations of Southern Asia); 147 (History of India to 1707); 148 (History of India and Pakistan to the Present); 195W (Studies in Modern Indian History); 248 (History of Modern India and Pakistan, 1857 to the Present); 297S (The British Empire in the Nineteenth Century); 298S (The Commonwealth in the Twentieth Century).

Political Science 101-102 (Introduction to the Civilization of Southern Asia); 148 (Arab and Non-Arab Muslim World); 155 (Problems of Political Development in the New States); 180 (Comparative Government and Politics: Southern Asia I); 181 (Comparative Government and Politics: Southern Asia II); 250 (Comparative Government and Politics: Southern Asia).

Religion 140 (Religions of India); 148 (Introduction to the Civilization of Southern Asia); 149 (Buddha and Buddhism); 217 (Islam in India); 284 (The Religion and History of Islam); 286 (Religious Trends in Modern India); 287 (Scriptures of Asia); 288 (Buddhist Thought and Practice).

## Comparative Literature

Associate Professor Rolleston (Germanic Languages), *Chairman of the Committee on Comparative Literature*; Professors Jantz (Germanic Languages), Ryals (English), Wardropper (Romance Languages); Associate Professors Borchardt (Germanic Languages), Burian (Classical Studies), DeNeef (English), Stewart (Romance Languages); Assistant Professors Hedges (Romance Languages), Dearlove (English)

Students contemplating a major in comparative literature should have a reading knowledge of a foreign language and a broad acquaintance with British and American authors. The program consists both of courses in literature written in a foreign language and of literature courses that are comparative in nature. Students taking the major are expected to acquire a reading knowledge of a second foreign language and to familiarize themselves with methods of studying literature in a comparative manner. The program, being largely interdisciplinary, is directed by a committee. All course selection requires the approval of the committee. Inquiries concerning eligibility and requirements should be directed to Professor Rolleston, Chairman of the Committee on Comparative Literature, 105 Language Building.

**100. Introduction to Comparative Literature.** History, prevailing approaches, methods of investigation, problems of literary influence and translation; European and American movements and genres. Occasional guest lecturers. One course. *Rolleston*

**120. Theater of the Absurd.** Development and cultural, social, and political significance for the twentieth century. Fall. One course. *Dearlove*

**124. Continental Humanism.** Readings from Boccaccio, Petrarch, Rabelais, Montaigne, Rojas, Cervantes, and Erasmus. One course. *Tetel*

**129. Fantasy and Madness.** Evolution and structure of the nineteenth-century French *conte* and German *novelle* with parallel readings in Russian, Japanese,

American, and Brazilian short fiction. Readings in English or (for French and German), in the original. One course. *Hedges*

**130. Literature and Film.** The roots of modern urban myths and the generation of new forms in twentieth-century prose fiction and film from the interaction of the individual and the city. Eight novelists (including Rilke, Cortázar, Robbe-Grillet) and five directors (Eisenstein, Lang, Welles, Godard, Ozu). Spring. Offered biennially. One course. *Hedges*

**131. A New Realism.** Literary-philosophical movement (1830-1900) usually designated as Realism arising subsequent to the failure of the Romantic vision. Fall. Offered biennially. One course. *Ryals*

**132. Dada and Surrealism.** The international dada and surrealist movement in its multiple manifestations: theatre, painting, novel, film, autobiography and manifesto. Knowledge of French or German desirable. Spring. Offered biennially. One course. *Hedges*

**160. An Approach to Comedy.** Nature, purpose, and effect of comedy in the theater. Readings from the classics (Aristophanes, Plautus, Terence), the Renaissance (Machiavelli, Shakespeare, Molière, Lope de Vega), the Restoration and the twentieth century. One course. *Wardropper*

**170. The Modern: Problems of Definition, History, and Language.** Texts from about 1840 to the present studied with a view to defining "the modern" against the background of the romantic denial of transcendence and the turn to history, society, nature, and the self as sources of meaning. Baudelaire, Nietzsche, Dostoevsky, Proust, Kafka, Virginia Woolf, Borges. Other poetry and short fiction. One course. *Rolleston*

**191, 192. Independent Study.** Directed reading and research. Open only to qualified students in the junior year, by consent of instructor. Two courses. *Staff*

**193, 194. Independent Study.** Directed readings and research. Open only to qualified students in the senior year, by consent of instructor. Two courses. *Staff*

**199. Theory and Practice of Translation.** Introduction to literary translation: linguistic foundations, historical role in literary culture, practical problems. Exercises and translation assignments. Prerequisite: consent of instructors. Fall. Offered biennially. One course. *Burian and Hedges*

## For Seniors and Graduates

**220S. Comparative Literature Seminar.** Topics vary. One course. *Jantz*

**280. Literary Criticism.** Emphasis on structuralist and poststructuralist theories and their antecedents. Lectures and discussion conducted by a interdepartmental team. One course. *Stewart*

## MAJOR IN COMPARATIVE LITERATURE

*Prerequisites.* A reading knowledge of at least one foreign language; English 55, 56 or the equivalent.

*Major Requirements.* (1) Comparative Literature 100; (2) two courses from those listed under Comparative Literature, or courses of literature in translation that cross national lines and invite comparative interpretation, or courses of literature written in languages that are seldom taught; (3) three courses in a single foreign



literature at the 100-level or above, to be read in the original language; (4) acquisition of a second foreign language through at least the intermediate level.

This last requirement may be fulfilled by examination or by completion of such courses as the following: Greek 63-64 or 181, 182; Latin 181S, 182S; German 63, 101, or 181, 182; French 63, 74, or 181, 182; Italian 63, 74, or 181, 182; Russian 63-64; Hindi-Urdu 183-184; Japanese 153, 154.

The Committee on Comparative Literature will assist the major in creating a program having unity and direction and will advise the student of pertinent conference courses and seminars offered each year in the various literature departments.

## Computer Science

Professor Patrick, *Chairman*; Professor Gallie, *Director of Undergraduate Studies*; Professors Loveland, Marinos, Naylor, Starmer, and Woodbury; Associate Professors Biermann, Brandwajn, Ramm, and Wagner; Assistant Professor Trivedi; Adjunct Professor Williams

The Department of Computer Science provides courses on the concepts of computing and computers, their capabilities and uses. Most courses require the student to make extensive use of one or more of the available computers as a problem-solving instrument. Students who wish to take a single introductory course in computer science, as part of their general education, usually elect Computer Science 51.

**42. Introduction to Digital Systems.** (Also listed as Electrical Engineering 42.) One course. *Marinos*

**51. Introduction to Digital Computation.** Flow charts; an assembly language; program structures, subroutines, data structures, arrays, polynomials; an algorithmic language; numerical linear algebra, matrix inversion, linear programming, and least-squares techniques. One course. *Gallie and staff*

**100S. Computer Programming Techniques.** Advanced programming techniques and applications. Prerequisite: Computer Science 51. One course. *Gallie*

**152. Data Structures.** Linear lists such as stacks, queues, dequeues, circular lists, and doubly linked lists; trees; multilinked structures and their use in algorithms. Prerequisite: Computer Science 51 or equivalent and the consent of the Director of Undergraduate Studies. (Also listed as Mathematics 152.) One course. *Staff*

**154. Computers and Programming.** Computer structure, machine language, instruction execution, addressing techniques, and digital representation of data. Computer systems organization, logic design, microprogramming, and interpreters. Symbolic coding and assembly systems, macrodefinition. Prerequisite: Computer Science 152 or consent of the instructor. One course. *Staff*

**157. Introduction to Switching Theory.** (Also listed as Electrical Engineering 157.) One course. *Marinos*

**163. Data Analysis.** Elements of probability and statistics, acquisition of data, maintenance of data bases, computation and display of statistical summaries. Prerequisites: Computer Science 51 and Mathematics 31 or equivalent. One course. *Woodbury*

**191, 192. Independent Study.** Directed reading and research for qualified juniors. Prerequisites: consent of instructor and Director of Undergraduate Studies. Two courses. *Staff*

**193, 194. Independent Study.** Directed reading and research for qualified seniors. Prerequisites: consent of instructor and Director of Undergraduate Studies. Two courses. *Staff*

## For Seniors and Graduates

**200. Programming Methodology.** Practical and theoretical topics including structured programming, specification and documentation of programs, debugging and testing strategies, choice and effective use of programming languages and systems, psychology of computer programming, proof of correctness of programs, analysis of algorithms, and properties of program schemata. Prerequisite: Computer Science 152. One course. *Wagner*

**201. Programming Languages.** Information binding, data structures and storage, control structures, recursion, execution environments, input/output; syntax and semantics of languages; study of PL/I, Fortran, Algol, APL, LISP, SNOBOL, and SIMULA; exercises in programming. Prerequisite: Computer Science 200. One course. *Wagner*

**207. Fault-Tolerant Computer Systems.** Test generation and diagnostic program development for detection and location of faults in digital networks; digital simulation as a diagnostic tool for test generation and verification of the initial system design; design of self-checking and fault-tolerant systems; and effectiveness evaluation of various fault-tolerant schemes. Fall semester. (Also listed as Electrical Engineering 207.) One course. *Marinos*

**208. Digital Computer Design.** (Also listed as Electrical Engineering 208.) One course. *Marinos or Owen*

**215. Artificial Intelligence.** Heuristic versus algorithmic methods; programming of games such as chess; theorem proving and its relation to correctness of programs; readings in simulation of cognitive processes, problem-solving, semantic memory, analogy, adaptive learning. Prerequisite: Computer Science 152 or consent of instructor. One course. *Biermann*

**221. Numerical Analysis I.** Error analysis and interval arithmetic, interpolation and polynomial approximation methods, numerical differentiation and integration, solution of simultaneous linear equations and matrix inversion, real and complex roots of nonlinear equations. Prerequisite: knowledge of an algorithmic programming language and intermediate calculus. (Also listed as Mathematics 221.) One course. *Gallie or Patrick*

**222. Numerical Analysis II.** Calculation of eigenvalues and eigenvectors, numerical methods for solving ordinary differential equations, partial differential equations, and integral equations. Prerequisite: Computer Science 221 or equivalent. (Also listed as Mathematics 222.) 3 units. *Patrick or Ulku*

**224. Logic and Algorithms.** Programming languages as formal languages. Elements of propositional and predicate logic. Algorithm design and analysis. Nondeterministic algorithms. Prerequisite: Computer Science 152 and four semesters of college mathematics. One course. *Staff*

**225. Formal Languages and Theory of Computation.** An introduction to the study of abstract machines and the languages they define, their capabilities and limitations. Finite-state automata; regular languages; pushdown automata; context-free languages; Turing machines; recursive functions and recursively enumerable sets; non-computable sets; measures of complexity for algorithms. Prerequisite: four semesters of college mathematics. One course. *Loveland*

**226. Mathematical Methods for Systems Analysis I.** Basic concepts and techniques used in the stochastic modeling of systems. Elements of probability, statistics, queuing theory, and simulation. Prerequisite: four semesters of college mathematics. One course. *Trivedi*

**227. Mathematical Methods for Systems Analysis II.** Basic concepts and techniques used in the deterministic modeling of systems. Elements of linear algebra; linear, integer, dynamic, and geometric programming; and unconstrained and constrained optimization. Prerequisite: four semesters of college mathematics. One course. *Staff*

**231. Introduction to Operating Systems.** Basic concepts and principles of multiprogrammed operating systems. Memory, CPU, I/O device management and scheduling. Buffering techniques. Performance evaluation. Case studies of existing systems. Prerequisite: Computer Science 154. One course. *Brandwajn, Trivedi*

**232. Compiler Construction.** Models and techniques used in the design and implementation of assemblers, interpreters, and compilers. Lexical analysis, compilation of arithmetic expressions and simple statements, specifications of syntax, algorithms for syntactic analysis, code generation and optimization techniques. One course. *Wagner*

**241. Data Base Management Systems.** Basic concepts and principles. Relational, hierarchical, and network approaches to data organization; systems and language support for data base systems; theories of data organization; security and privacy issues. Prerequisites: Computer Science 152 and 154. One course. *Starmer*

**244. Decision Models of the Firm.** Various approaches to modelling firm behavior, including marginal analysis, mathematical programming, dynamics, risk, simulation, investment, game theory, and behavioral analysis. (Also listed as Economics 244.) Fall. One course. *Naylor*

**252. Computer Systems Organization.** Hardware and software aspects. Processor, memory, device, and communication subsystems; case studies of hardware system organization, e.g., parallel, associative, fault-tolerant; organization of software systems to exploit hardware systems organization; economic and reliability aspects of various hardware organizations. Prerequisites: Computer Science 154 and 157. (Also listed as Electrical Engineering 252.) One course. *Trivedi*

**265. Advanced Topics in Computer Science.** One course. *Staff*

## DEPARTMENTAL MAJOR

### The B.S. Degree

*Prerequisites.* Computer Science 51; Mathematics 31, 32, 103, 104.

*Major Requirements.* Computer Science 152, 154, three of the following: 157, 163, 200, 215, 221, 224, 231, 232, 241; and Mathematics 135 or 183. If Mathematics 135 is elected, it is strongly recommended that it be followed by Mathematics 136 or 206. Students must take enough additional courses so that they have completed at least five courses (excluding Mathematics 103, 104) at the 100-level or above in one department other than Computer Science or in an approved area. A list of areas which have been approved by the department, such as the zoology-chemistry combination often chosen by premedical students, may be obtained from the Director of Undergraduate Studies.

*Honors.* Any student who is qualified (see the section on Honors in this bulletin for general requirements) may undertake work leading to a degree with distinction in computer science by applying to the Director of Undergraduate Studies.

Candidates must complete a substantial project, suitably documented, or a distinguished paper on which they will be examined orally by a committee of three faculty members.

Students planning to do graduate work will probably find a reading knowledge of at least one foreign language useful. Students who expect to do their graduate work in computer science should try to include Computer Science 221 and modern algebra in their course of study.

## Distinguished Professor Courses

**194S. Psychology and the Political Experience.** An exploration of psychological variables related to political attitudes, the structure of political movements, styles of political movements, styles of political leadership, and the political behavior of the average citizen. Prerequisite: junior or senior standing and consent of instructor. One course. *Bevan*

**195S. American Culture and College Sports.** Nature, significance, and control of intercollegiate sport, especially football and basketball. Prerequisite: consent of instructor. One course. *Cady*

**196S. Current Political Problems in Western European and Commonwealth Countries.** Prerequisite: consent of instructor. One course. *Cole*

**201. Dante's Inferno.** Reading of the *Inferno*; its use by such authors as Eliot, Joyce, and Beckett. Taught in English. One course. *Fowlie*

## Drama

Associate Professor Clum (English), *Director of the Program in Drama and Chairman of the Interdisciplinary Committee on Drama*; Professors Cordle (French), Krynski (Slavic languages), and Wardropper (Spanish); Associate Professors Burian (classical studies), Jezierski (Slavic languages), Reardon (English), and Stewart (Romance languages); Assistant Professor Alt (German); Instructor Schwartz (English); Lecturers Aumiller and Regier; Artist-in-residence Wetzel

## PRACTICAL THEATER

**91. Introduction to Theater Arts.** Acting, directing, design, criticism, administration, theater as a profession. One course. *Reardon and staff*

**101. Acting.** Basic acting skills; diction, movement, improvisation, interpretation. One course. *Aumiller or Clum*

**102. Advanced Acting.** Advanced work in interpretation and scene study. Prerequisite: Drama 101. One course. *Staff*

**107S. Advanced Scene Study.** Seminar in research into historical psychological, and technical interpretation. Prerequisite: Drama 101 and 102. One course. *Aumiller or Clum*

**109. Television Workshop.** Acting and directing. Videotaping of television dramas. Taught by a professional actor-director. One course. *Staff*

**111. Directing.** Basic training in casting, blocking, and interpretation. Prerequisite: Drama 101. One course. *Staff*

**121. Stagecraft.** An introduction to technical aspects of play production: scenery, lighting, properties, make-up, and costuming. Laboratory work coordi-



nated with productions of Duke Players or Summer Theater at Duke. One course. *Regier*

**122. Advanced Topics in Scene or Lighting Design.** Prerequisite: Drama 121. One course. *Regier*

**131S. Theater Administration.** Practical aspects of management: budgets, personnel organization, fund raising, repertory, publicity. One course. *Aumiller*

**171. Special Topics in Practical Theater:** Makeup, mime, movement, etc. Half-course. *Staff*

**181S. Conference on Special Topics.** Playwriting, criticism, etc. (Also listed as English 181S.) One course. *Staff*

**191-194. Independent Study.** Intensive study or special projects in theater history or practical theater approved by the Committee on Drama. One course. *Staff*

## DRAMATIC LITERATURE

**59. Film Criticism.** Introduction to principles of writing about the cinema. (Also listed as English 59.) One course. *Clum, Jones, Monsman, or Stranberg*

**64. The Drama.** Reading in translation of Greek and Roman tragedies (Aeschylus, Sophocles, Euripides, Seneca) and comedies (Aristophanes, Menander, Plautus, Terence). (Also listed as Classical Studies 64.) One course. *Burian*

**119. History of the Theater.** The origin and development of drama, acting and stagecraft from ancient Greece to the modern European and American theater. (Also listed as English 119.) One course. *Clum or Reardon*

**141, 142. Shakespeare.** First semester: twelve plays before 1600. Second semester about ten plays after 1600. (Also listed as English 123, 124.) Two courses. *DeNeef, Jones, or G. Williams*

**143. English Drama from the Middle Ages through the Eighteenth Century.** Emphasis on Tudor and Stuart drama, exclusive of Shakespeare. (Also listed as English 129.) One course. *Clum or Reardon*

**144. English and Irish Drama of the Nineteenth and Twentieth Centuries.** Emphasis on the modern period. (Also listed as English 159.) One course. *Clum or Reardon*

**145. Modern European Drama.** Ibsen to the present; the free theater movement and the drama of ideas. (Also listed as English 169.) One course. *Clum or Reardon*

**146. American Drama.** Representative plays from Colonial times to the present: an historical survey. (Also listed as English 179.) One course. *Clum or Reardon*

**147. Ibsen and Strindberg.** Selected plays read in their Scandinavian context; their significance for realism, symbolism, and the principle of dissociation in twentieth-century drama. (Also listed as English 165.) One course. *Anderson*

**151. Theory and Form of Tragedy.** A study of major theorists and an analysis of principal Greek, French, and English tragedies. (Also listed as French 151.) One course. *Fowlie*

**152. French Comedy in the Seventeenth and Eighteenth Centuries.** The theatrical tradition of comedy and its evolution; readings from Corneille, Molière,

Lesage, Marivaux, and Beaumarchais. (Also listed as French 110.) One course. *Stewart*

**153. French Drama of the Nineteenth Century.** A survey of the French theater from the Romantic period to the Théâtre libre. (Also listed as French 111.) One course. *Niess*

**154. French Drama of the Twentieth Century.** A survey of literature for the stage from 1890 to the present. One play each of Claudel, Maeterlinck, Jarry, Giraudoux, Cocteau, Ghelderode, Anouilh, Montherlant, Sartre, Camus, Genet, Ionesco, Beckett, Pinget, Vian, Arrabal. (Also listed as French 112.) One course. *Cordle*

**155S. Drama.** Development of German drama and stagecraft from *Sturm und Drang* to Brecht's Epic Theater. (Also listed as German 115S.) One course. *Alt*

**161. The Russian Theater and Drama.** Russian drama from its beginnings to the present. Readings in English or Russian. (Also listed as Slavic Languages 105.) One course. *Jezierski*

**162S. Russian and Polish Drama of the Nineteenth and Early Twentieth Centuries.** Russian plays by Griboedov, Pushkin, Gogol, Turgenev, Chekhov, Gorky; Polish plays by Mickiewicz, Krasinski, Wyspianski. History of Russian and Polish theater. (Also listed as Slavic Languages 106S.) One course. *Jezierski or Krynski*

**163. Slavic Drama and Theater of the Twentieth Century.** Russian, Polish, and Czech plays from the beginning of the century through the mid-seventies: Chekhov, Mayakovsky, Evreinov, Witkiewicz, Gombrowicz, Mrozek, Rozewicz, and Capek. Theatrical theories of Meyerhold, Vakhtangov, Tairov, Grotowski, and others. Slavic avant-garde developments, especially of the last two decades, in the context of Western European "Theater of the Absurd." Readings in English, or, if qualified, in Russian or Polish. (Also listed as Slavic Languages 183.) One course. *Krynski*

**189. The American Film.** An historical survey focusing on the work of major directors and important genres. One course. *Clum*

## MAJOR IN DRAMA

*Prerequisites.* Drama 91 and 119.

*Major Requirements.* Four courses in practical theater from the offerings of the drama program. At least two courses must be in the same area (acting, directing, technical theater). Three courses in dramatic literature from the offerings of related departments.

## Economics

Professor Kelley, *Chairman*; Professor Davies, *Director of Undergraduate Studies*; Professors Blackburn, Bronfenbrenner, Goodwin, Grabowski, Graham, Kreps, Lewis, Naylor, Saville, Tower, Trembl, Vernon, Wallace, Weintraub, and Yohe; Associate Professors de Marchi, Fenoaltea, Havrilesky, and McElroy; Assistant Professors Bolnick, Conrad, Cook, Lipscomb, Tauchen, and Weymark

Economics courses aim to develop the critical and analytical skills essential for understanding economic problems and institutions, in both their contemporary and in their historical setting. Although no particular vocational or professional goal is emphasized, these courses provide the academic background necessary for

positions in industry, for work in many branches of government service, for law school, and for graduate study in business administration, economics, and the social sciences.

Students planning to do graduate work in economics are advised to take as many of the following courses in mathematics (listed in preferential order) as their schedules permit: Mathematics 31, 32, 103, 104, 131, 135, and 136.

**1. National Income and Public Policy.** Basic economic analysis emphasizing current public policy issues. How the level and rate of growth of aggregate national income and output are determined. What causes unemployment, inflation, and international payment problems. How monetary policy (money supply and interest rates) and fiscal policy (government expenditures and taxes) affect these problems. (Open only to freshmen.) One course. *Staff*

**2. Competition, Monopoly, and Welfare.** A continuation of Economics 1. How the composition of the economy's output and distribution of its income (who is rich and who is poor) are determined in a market economy by supply and demand. How and why markets work or fail to work and the implications of social policies. Role of government in a market economy. Contemporary problems of the environment. Topics such as environmental economics, monopoly, unionism, international trade. Comparison of a market economy with other systems of economic organization. Economic problems of developing countries. (Open only to freshmen.) One course. *Staff*

**51. National Income and Public Policy.** See Economics 1. (Open to all students.) One course. *Staff*

**52. Competition, Monopoly, and Welfare.** See Economics 2. (Open to all students, except those who have had Management Sciences 50.) One course. *Staff*

**51D, 52D.** The same courses as Economics 51, 52 except taught as lectures with discussion sections. Two courses. *Staff*

**53. Economics of Contemporary Issues.** Modern economic problems, such as environmental deterioration and urban decay. The market as one of the interrelated subsystems of the social system, from institutionalist, Marxist, and other perspectives in the social sciences. One course. *Havrilesky*

**105. Economics and Justice.** Welfare judgments and the normative background of positive economics. Foundations of distributive justice and social change. Prerequisites: Economics 52 and Mathematics 31. One course. *Weintraub*

**106. The Economics of Poverty.** Poverty in the United States: its definition, measurement, history, racial dimensions, and present and proposed policies for its amelioration. Prerequisite: Economics 52. One course. *Grabowski or Kreps*

**107. Economics of the Environment.** Theory and practical analysis of the interdependence between environmental quality and consumption, production, public policy, and economic growth. One course. *Staff*

**108. Economics of War.** Conflict theory, causes and economic consequences of war, military manpower, military-industrial complex, disarmament, and the economy. Prerequisite: Economics 52. One course. *Weintraub*

**114. Economic Geography of Africa.** A continental study of the natural environmental factors of Africa and the basic economic patterns of adjustments and adaptations on regional or national bases. One course. *Tuthill*

**115. Fundamentals of Geography.** A functional social studies approach to geographic factors and their interrelationships. One course. *Tuthill*

**116S. Economic Geography of Anglo-America.** Geographic and economic regions of the United States and Canada; their resource base and the major economic activities, their spatial distribution, and relative significance. Prerequisite: Economics 115. One course. *Tuthill*

**117. Economic Geography of Canada.** Natural environmental factors and basic resources. Topics include development of Canadian resources, transportation infrastructure, and emergence of Canadian world trade. National, regional, and provincial approaches to development. One course. *Tuthill*

**132. Introduction to Economic History.** A survey of Western economic history: population, production, exchange, and institutions, from antiquity to the present. Prerequisite: Economics 52 or consent of the instructor. *Fenoaltea*

**134. Quantitative Analysis in Economics.** Partial derivatives. Lagrange multiplier methods, matrix theory, and difference and differential equations. Prerequisites: Mathematics 31 and Economics 149. One course. *Staff*

**138. Economic Statistics.** Survey of principal concepts and methods of application to economics. (Not open to students who have had Mathematics 53 or 183, Management Sciences 110, Psychology 117.) One course. *McElroy, Tauchen, Vernon, or Wallace*

**139. Introduction to Econometrics.** Data collection, estimation, and hypothesis testing. Use of econometric models for analysis and policy. Prerequisites: Mathematics 31 and 32, or equivalent, and Economics 138 or Management Sciences 110 or equivalent. One course. *McElroy, Tauchen, Vernon, or Wallace*

**149. Microeconomic Theory.** Cost and supply considerations in price theory; the demand for factors of production. The allocation of resources is examined in the context of competitive and monopolistic market structures. Prerequisites: Mathematics 51 and Economics 2 or 52. (Not open to students who have had either Economics 161 or Public Policy Studies 110.) *Graham, McElroy, Trembl, Vernon, or Wallace*

**150. History of Economic Thought.** Includes approaches to economic problems from Aristotle to Samuelson, emphasizing certain models and doctrines—their origins, relevance, and evolution. Readings from Mun, Quesnay, Adam Smith, Malthus, Ricardo, Marx, Pareto, and Keynes. One course. *Goodwin or de Marchi*

**153. Monetary Economics.** The evolution and operations of commercial and central banking and nonbanking financial institutions in the United States, the determination of monetary aggregates and interest rates, the financial impacts of Treasury operations, and the linkages from Federal Reserve actions to price level, employment, economic growth, and balance of payments objectives. One course. *Bolnick, Havrilesky, or Yohe*

**154. Aggregate Economics.** Concepts and measurement of national income and expenditures, employment, interest rates, and price levels; the theoretical determination of these aggregates; applications of macroeconomic theory to business cycles and economic growth. Prerequisites: Economics 51 and Mathematics 31. One course. *Bolnick, Bronfenbrenner, Havrilesky, Tauchen, Tower, or Yohe*

**155. Labor and Manpower Problems.** Current issues of unemployment, wages, and incomes of nonworkers. Manpower policies and labor-force quality. Sex, age, and race differences in labor-force participation and in earnings. Prerequisite: Economics 52. One course. *Kreps*



**156. Labor Economics.** The supply of labor; human fertility; investment in persons; hours of work and labor-force participation; mobility and migration. The derived demand for labor. Wage distribution and wage structure. Unions and government in relation to labor. Prerequisite: Economics 149. One course. *Lewis*

**184. Canada: Problems and Issues of an Advanced Industrial Society.\*** See Interdisciplinary Course 184 for course description. (Also listed as History 184, Political Science 184, and Sociology 184.) One course. *Preston and visiting lecturers*

**189. Business and Government.** Public policies which most directly affect the operation of competition in the business world. The economic basis for an evaluation of antitrust policy, public utility regulation, and public enterprise. Prerequisite: Economics 149 or consent of the instructor. One course. *Grabowski or Vernon*

**191, 192. Independent Study.** Directed reading and research. Prerequisites: consent of instructor and department. Two courses. *Staff*

**193, 194. Independent Study.** Same as Economics 191, 192, but for seniors. Two courses. *Staff*

**198S. Topics in Market Organization.** Market structures, related economic and legal issues, and attempted policy solutions in the United States. Prerequisite: Economics 149. One course. *Grabowski or Vernon*

### **Junior-Senior Seminars in Economics**

**201S.1, 202S.1. Current Issues in Economics.** Economic analysis of various public issues and policies. Readings, reports, and discussion on the health care system, crime and punishment, pollution and the environment, the performing arts, welfare, the energy crisis, and other topics. Prerequisite: Economics 138. One course. *Davies*

**201S.2. Mathematical Economics.** Selected mathematical tools from symbolic logic, naive set theory, linear algebra, calculus, analysis, and elementary topology applied to the analysis of economic problems. Topics include consumer choice, production, general equilibrium, and growth. Prerequisites: two semesters of college calculus and Economics 149. One course. *Graham*

**201S.3. Economics of Higher Education.** An analysis of the demand for educated manpower, public and private costs and benefits, the role of private higher education, public policy in higher education, and other topics. One course. *Blackburn*

**201S.4. Conflict and Cooperation in Economics.** Elements of game theory. Both cooperative and noncooperative games with particular reference to economic problems such as trading, general equilibrium theory, oligopoly, and monopoly. Prerequisite: Economics 149. One course. *Weintraub or Weymark*

**201S.5. Impact Analysis of Government Policies.** The impact of government policies on income and employment utilizing methodology of input-output analysis. Applied problems: impact on environment, conflicting national priorities, technological change, marketing projections, foreign trade, shifts in demand, disarmament. One course. *Trenl*

**201S.6. Current Problems in International Monetary Arrangements.** The breakdown of the international monetary system. Effects of alternative retaliatory schemes. Effects on the international transmission of business conditions of

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\*This course does not count toward the courses required for an economics major.

flexible exchange rates. Optimum stocks of international monetary reserves. Prerequisite: Economics 149 or 265. One course. *Tower*

**201S.7. Economics of Discrimination.** Analysis of the extent and effects of racial, sex, and age discrimination in the labor force; wage differentials, age-earnings profiles, and returns to education. One course. *Kreps*

**201S.8. The Economics of Population.** Relationship of population growth to economic development and to natural resource and environmental pressures. Causes and impacts of population change, including economic models of fertility, mortality, marriage, and migration. Prerequisite: Economics 138. One course. *Kelley*

**201S.9. The Japanese Economy.** Historical background, present status, future prospects, rival interpretations of the long-term "miracle" of Japanese economic development. (1868-1912; 1950-1973.) One course. *Bronfenbrenner*

**201S.10. Economics of the Arts.** Recent trends in professional theater, music, dance, and art museums; related topics selected by seminar participants. Roles of government, private contributions, and market forces. Prerequisite: Economics 138. One course. *Blackburn*

## For Seniors and Graduates

**200. Capitalism and Socialism.** Selected ideological classics of new and old right and left economics including both "counsels for perfection" (Utopias) and "precepts for action" in political economy. Prerequisite: Economics 149 or 154, or consent of instructor. One course. *Bronfenbrenner*

**204S. Advanced Money and Banking.** Monetary theory and its statistical and institutional implementation. Particular attention is given to the development of aggregative theories of prices, interest rates, and production; the functioning of monetary policy within various theoretical frameworks; and appraisal of the recent use and the limitations of Federal Reserve policy. One course. *Havrilesky or Yohe*

**205S. Advanced Monetary Theory and Policy.** Emphasis on recent issues: monetary-fiscalist controversy, the monetary policy transmission mechanism, and policy simulations with econometric models. One course. *Havrilesky or Yohe*

**211. Introduction to Mathematical Economics.** Applications of topics in calculus, differential equations, and linear algebra to the theory of the firm, capital theory, macroeconomics, cycles, growth, and linear economic models. Prerequisites: Economics 149 and 154 and Mathematics 31 and 32, or equivalent. One course. *Graham*

**212S. Economic Science and Economic Policy.** An historical examination of the impact of economics on public policy; special attention to agriculture, labor relations, the Council of Economic Advisers, and the experience of other countries. One course. *Goodwin*

**214. Geonomics: Geography and Contemporary Economics of Africa.** Environmental factors in relationship to major economic activities, emphasizing the resource base, ecological adjustments, landscape morphology, and international interdependence. A series of national studies synthesized into a continental format. Prerequisite: consent of the instructor. One course. *Tuthill*

**219. Economic Problems of Underdeveloped Areas.** Consideration and analysis of the economic and related problems of underdeveloped countries. Some attention will be given to national and international programs designed to

accelerate the solution of these problems. Prerequisite: Economics 149 or consent of instructor. One course. *Bolnick, Kelly, Naylor, or Saville*

**231S. Analytical Economic History.** An introduction to the methods of the new economic history; problems of measurement, comparative and counterfactual analysis, partial and general equilibrium models, rational market behavior, and institutional choice. Prerequisites: Economics 138, 149, and 154. *Fenoaltea*

**232. Economic History of Japan.** Japanese economic development, stressing the period since the end of isolation. Prerequisite: one semester of economic analysis or of Far Eastern history. (Also listed as History 260.) One course. *Bronfenbrenner*

**233. State and Urban Finance.** Expenditures, taxation, and financial administration in state and local governments, with emphasis on current problems. Special attention will be given to research methods and materials, and to the financial relations between state and local governments. Prerequisite: Economics 149 or consent of instructor. One course. *Davies*

**234. Urban Economics.** Economic factors which influence the internal development of metropolitan areas. Urban problems involving slums, ghettos, poverty, and transportation are analyzed from an economic point of view. Prerequisite: Economics 149 or consent of instructor. One course. *Staff*

**235. The Economics of Crime, Law Enforcement, and Justice.** An analysis of the social costs of law enforcement and crime, a theoretical and empirical study of criminal deterrence, the measurement and production of law enforcement outputs, and an economic analysis of the courts and correctional system. Prerequisite: Economics 149 or equivalent. One course. *Cook*

**237, 238. Statistical Methods.** A study of statistical methods appropriate for dealing with problems in business and social science. In addition to developing more thoroughly the subject considered in business statistics, the following methods will be considered: simple, multiple, partial, and curvilinear correlation; curve fitting; probability; sampling distributions; and statistical inference. Prerequisite: Economics 138 or consent of the instructor. Two courses. *Staff*

**243. Econometrics I.** Economic theory, mathematics, statistical inference, and electronic computers applied to analysis of economic phenomena. Objective is to give empirical content to economic theory. Matrix algebra used to develop topics in inference, linear regression, and systems of simultaneous equations. Use is made of the electronic computer. One course. *Wallace*

**244. Decision Models of the Firm.** Various approaches to modeling firm behavior, including marginal analysis, mathematical programming, dynamics, risk, simulation, investment, game theory, and behavioral analysis. (Also listed as Computer Science 244.) One course. *Naylor*

**245. Econometrics II.** Advanced theory and applications: includes specification error, generalized least squares, lag structures, Bayesian decision making, simultaneous equation methods, and forecasting. Emphasis on current applied literature. A Track 1, third-level course. Prerequisite: Economics 243. One course. *McElroy or Wallace*

**250. Post-Keynesian Economic Thought.** Integrated survey of the several major streams of economic theory since 1936. Selected topics from the economics of Keynes, its offshoots and coordinate developments, and post-Marxian economic theory. Historical evolution of recent ideas and their interrelations. Prerequisite: Economics 154. One course. *de Marchi*

**257. Manpower and Human Resources.** Allocation of human resources; returns to investments in education and training; qualitative composition of the labor force. One course. *Kreps*

**262. Trade Unionism and Collective Bargaining.** An intensive survey of the trade union as an economic institution is followed by a study of the principles and problems of union-management relationship as found in collective bargaining. One course. *Staff*

**265S. International Trade and Finance.** A study of fundamental principles of international economic relations. Subjects covered include the economic basis for international specialization and trade, and the economic gains from trade, the balance of international payments, problems of international finance, investments, and monetary problems. Prerequisite: Economics 149. One course. *Bronfenbrenner or Tower*

**282S. Seminar on Canada.** Does not count for the major requirements. See course description for Interdisciplinary Course 282S. (Also listed as Anthropology 282S, History 282S, Political Science 282S, Sociology 282S, and under Canadian Studies.) One course. *Staff and visitors*

**287. Public Finance.** Economic aspects of such problems as the growth of government, the proper role of the state, the centralization and decentralization of government, government bureaucracy, the impact of taxes and spending on the wealthy and the poor as well as other public policies and questions. Prerequisite: Economics 149. One course. *Davies*

**293. Soviet Economic History.** Establishment of foundations of a socialist economy: collectivization, industrialization, and search for economic efficiency. One course. *Trembl*

**294S. Soviet Economic System.** Economic planning and administration in the Soviet Union and other socialist countries. International comparisons. Theoretical and applied problems of resource allocation, economic development, and optimal micro decision-making in a nonmarket economy. One course. *Trembl*

## DEPARTMENTAL MAJOR

*Prerequisites.* Mathematics 31, Economics 1 or 51, Economics 2 or 52 (Management Sciences 50 will be accepted in lieu of Economics 2 or 52).

*Major Requirements.* Any five additional courses in the department. Substitution of courses in other departments for similar courses in the economics department will not be permitted. Prerequisite for admission to a junior-senior seminar are two of the following courses: Economics 138, 149, 154.

For graduation with distinction in economics, at least one junior-senior seminar course and an honors paper are required. See section on honors for other requirements.

For students entering Duke in the fall of 1978 and thereafter, the new major requirements will be Economics 149, 154, and any three additional 100 or 200 level courses. The prerequisites will still be Mathematics 31, Economics 1 or 51, Economics 2 or 52, except that a minimum grade of C- is required in Mathematics 31.

## Education

Professor Flowers, *Chairman*; Associate Professor Pittillo, *Associate Chairman*; Associate Professor Colver, *Director of Undergraduate Studies*; Professors Adams, Cartwright,



Gehman, and Hopkins; Associate Professors Ballantyne, Carbone, Davis, Di Bona, Johnson, Kuhn, Martin, and Sawyer; Assistant Professor Michlin

Students who expect to teach in the public schools should confer with Department of Education advisers prior to registration each semester. Students who intend to teach in elementary schools should consult with Professor Colver; those intending to teach in secondary schools should consult with Professors Cartwright, Kuhn, or Michlin.

Students who do not expect to teach but desire an understanding of the school as part of their liberal education are advised to elect such courses as Education 100 and 113 for their introductory work in the department and then to elect further work in accordance with their special interests.

**100. Social and Philosophical Foundations of Education.** Basic features and assumptions, viewpoints, and issues of education in contemporary America. One course. *Carbone, Di Bona, or Martin*

**104. The School as an Organization.** Structure and functions; impact on students and teachers; linkages with society. Field experiences in several educational settings. Prerequisite: Education 100. One course. *Di Bona or Martin*

**105. Elementary Education: Reading.** Must be taken concurrently with Education 106. Half-course. *Adams*

**106. Elementary Education: Language Arts.** Must be taken concurrently with Education 105. Half-course. *Adams*

**107. Elementary Education: Mathematics.** Half-course. *Petty*

**108. Elementary Education: Science.** Half-course. *Staff*

**113. History of American Education.** American education from colonial times to the present. Development of schools, their organizations, administration, curriculum, and methods in relation to the social forces which produced our particular type of civilization. One course. *Johnson*

**118. Educational Psychology.** Psychology of learning, individual and social development, and psychology of adjustment as related to problems of instruction and the process of education. Prerequisite: Psychology 102, 103, 104, or 105. One course. *Davis or Ballantyne*.

**119. The Governance and Administration of Education.** Agencies and officials of government affecting the making of educational policy in the United States and of the administration of that policy in practice. (Also listed as Political Science 119.) One course. *Hall or Leach, and Pittillo*

**151. Public School Music Education.** (Also listed as Music Education 151.) Half-course.

**152. Public School Music Education II.** (Also listed as Music Education 152.) Half-course.

**161. Integrated Art in the Public School.** Materials and methods in basic two-dimensional art media. Half-course. *Staff*

**162. Plastic Art in the Public School.** Basic three-dimensional art; emphasis on ceramics. Half-course. *Staff*

**168. Secondary Education: Teaching Reading.** Teaching reading in the content areas; determining students' reading levels; locating, evaluating, and selecting instructional materials. One course. *Adams*

**173, 174. Tutorial Practicum in Reading.** Assessment of reading abilities and disabilities; instruction of individuals and small groups of elementary and/or secondary students enrolled in the Duke Reading Center. Prerequisites: Education 105, 106, or Education 236, and consent of instructor. Two courses. *Adams*

**189. Internship in Governance and Administration of Education.** Practical experience in an office or agency of educational governance or administration. Prerequisite: Education 119 or Political Science 119. (Also listed as Political Science 189.) One course. *Hall or Leach, and Pittillo*

**191, 192. Independent Study.** Directed reading and research for juniors. Prerequisites: approval of the instructor and the Director of Undergraduate Studies. Two courses. *Staff*

**193, 194. Independent Study.** Directed reading and research for seniors. Prerequisites: approval of the instructor and the Director of Undergraduate Studies. Two courses. *Staff*

**195S. Elementary Education: Principles.** The nature, subject matter, and organization of elementary education for instruction in the primary and intermediate grades. Must be accompanied by Education 196. Half-course. *Staff*

**196. Elementary Education: Internship.** Full time for second half of semester. One and one-half courses. *Staff*

### For Seniors and Graduates

**201. Mathematics Programs in the Elementary School.** Objectives, curriculum, and instructional strategies. One course. *Kuhn*

**202. Comparative and International Education: Industrialized Nations.** Structure and functioning of educational institutions in selected developed societies. Relevant social science theory and methods. One course. *Di Bona*

**203. Seminar in Philosophical Analysis of Educational Concepts.** Selected writings of contemporary philosophers; emphasis on such educational concepts as teaching, learning, knowing, understanding, indoctrination, explanation, and education. One course. *Carbone*

**204. Educational Organization.** Theory and research on the processes of exchange between educational organizations and their external environments; influence on organizational structure, goals, and practices. Examining schools, colleges, and universities through a comparative approach with other forms of social organizations: hospitals, businesses, and prisons. One course. *Martin*

**205. Selected Topics.** One course. *Staff*

**206. Studies in the History of Educational Philosophy.** The educational views of leading thinkers in the history of Western philosophy, including Plato, Augustine, Locke, Rousseau, Kant, Whitehead, and Dewey. One course. *Carbone*

**207. Social History of Twentieth-Century American Education.** Twentieth-century American education in the context of social and intellectual history. One course. *Johnson*

**209S. John Dewey.** Dewey's major writings with emphasis on his philosophy of education. One course. *Carbone*

**210. The Politics of Education.** (Also listed as Political Science 210.) One course. *Staff*

**213. Elementary School Organization and Administration.** Nursery school, kindergarten, and the elementary school. Problems of internal organization and management of elementary school and its integration with secondary school. One course. *Flowers or Pittillo*

**215S. Secondary Education: Principles.** Principles, curriculum, and methods in secondary education. Prerequisite: C average overall and in teaching field or fields. Must be accompanied by Education 216. One course. *Cartwright, Kuhn, or Michlin*

**216. Secondary Education: Internship.** Supervised internship in junior and senior high schools. Full time for half a semester. Two courses. *Cartwright, Kuhn, or Michlin*

**217. The Psychological Principles of Education.** Advanced study of teaching, learning, and the learner. One course. *Sawyer*

**218S. Comparative and International Education: Developing Societies.** One course. *Di Bona*

**219. Comparative and International Education: South Asia.** Traditional and modern educational developments in India and Pakistan. One course. *Di Bona*

**221. Programs in Early Childhood Education.** Objectives and philosophy underlying programs in early childhood education. One course. *Staff*

**222. New Developments in Elementary School Curriculum.** One course. *Staff*

**223. Teaching the Language Arts.** Comparison of current methods and materials in the teaching of handwriting, spelling, and oral and written composition. Analysis and correction of basic difficulties. One course. *Adams*

**224. Teaching the Social Studies in Elementary Schools.** One course. *Cartwright*

**225. The Teaching of History and the Social Studies.** Evaluation of the objectives, content, materials, and methods in the teaching of history and the social studies. One course. *Cartwright*

**226. Teaching Developmental and Remedial Reading in the Elementary School.** Principles, methods, and materials for the development of effective reading attitudes and skills in developmental and remedial programs. One course. *Adams*

**229. Assessments of Reading Disability Cases.** Standardized tests, other methods, and informal procedures used in diagnosing reading problems of elementary and secondary pupils. One course. *Adams*

**230. Research Methods.** One course. *Sawyer*

**232. Psycho-educational Counseling with Families.** Individual and group counseling concerning psycho-educational problems of families. Prerequisite: consent of instructor. One course. *Ballantyne, Davis, or S. Gehman*

**233. Improvement of Instruction in English.** Recent developments and research techniques in the teaching of English through individual projects. Prerequisite: consent of instructor. One course. *Michlin*

**234. Secondary School Organization and Administration.** Objectives and philosophy underlying the organization and administration of the secondary school. One course. *Flowers*

**236. Teaching Developmental and Remedial Reading in the Secondary School.** Principles, methods, and materials for the development of effective reading attitudes and skills in developmental and remedial programs. One course. *Adams*

**237. Teaching of Literature in Secondary Schools.** Conventional, adult, and transitional literature are considered. One course. *Michlin*

**238. Content, Supervision, and Administration of Reading Programs.** Objectives, organization, attributes, and evaluation of reading programs. One course. *Adams*

**239. Teaching of Grammar, Composition, Mechanics, and Usage in Secondary School.** Recent developments. One course. *Michlin*

**240. Career Development.** Analysis of the world of work; sociopersonal factors affecting occupational choice; theories of career development; use of occupational and educational resources. One course. *Ballantyne*

**241. Foundations of Counseling and Personnel Services.** Scope, principles, historical background, services, trends, and issues of counseling, and pupil personnel services. One course. *Ballantyne*

**243. Personality Dynamics.** Personality structure and dynamics emphasizing implications for counseling and instruction. Prerequisite: six hours of psychology or educational psychology. One course. *S. Gehman*

**244. Counseling Techniques.** Individual counseling techniques; diagnosis, interviewing, program planning, and counseling evaluation. Prerequisites: Education 243 and 258 or equivalent, which may be taken concurrently. One course. *S. Gehman*

**245. Theories of Counseling.** One course. *S. Gehman*

**246. Teaching of Mathematics.** Aims, curriculum, and classroom procedure for teaching secondary school mathematics. One course. *Kuhn*

**247. Practicum in Guidance and Counseling.** Local field experience in counseling and guidance program. Minimum of 150 hours of case work and supervision. Prerequisites: Education 244 and consent of instructor. One course. (May be repeated.) *Ballantyne, Colver, Gehman, or Sawyer*

**248. Practicum in Counseling.** Individual counseling; test administration, intake interviewing, diagnosis, program planning, report preparation, and evaluation. Minimum of 150 hours of case work and conferences with the supervisor. Prerequisite: consent of instructor. One course. (May be repeated.) *Ballantyne, Gehman, or Sawyer*

**249. Exceptional Children.** Survey of major categories of exceptional children: mentally retarded, emotionally disturbed, brain-injured, learning-disabled, physically handicapped, visual and auditory deficient, culturally deprived, and gifted. Etiology (biological and environmental factors), diagnosis, and treatment. One course. *Davis*

**250, 251. Teaching Emotionally Disturbed Children: Internship.** Basic principles and practices in teaching and organization of instructional materials. Work with children under supervision of a certified teacher of emotionally disturbed children. Experience in general classroom, small group, and individualized instruction. Participation in staff conferences with psychiatrists, psychologists, social case workers, and professional educators. Two courses. *S. Gehman*



**253. Introduction to Law and Education.** Basic elements of legal research, with primary emphasis on concepts and procedures relevant to educational problems. Analysis of selected cases. One course. *Martin*

**254. Law and Higher Education.** Concepts and procedures relating to higher education. Emphasis upon court decisions. Prerequisite: Education 253 or consent of instructor. One course. *Flowers*

**255. Assessment of Abilities.** The selection, use, and interpretation of various instruments for predicting and evaluating the outcome of educational experiences including surveys of standardized tests of aptitude and achievement. One course. *Colver*

**256. Classroom Assessment of Student Achievement.** The techniques used by classroom teachers to evaluate student progress. Special emphasis will be directed to tests written by teachers. One course. *Colver*

**258. Assessment of Personality, Interests, and Attitudes.** Rationale, construction, use, and interpretation of standardized instruments designed for the assessment of students' interests, attitudes, and personalities. Emphasis on counseling applications. Prerequisites: Education 243 and 255 or consent of instructor. One course. *Colver*

**259. Problems in Law and Education.** Current issues; researching of cases, constitutional decisions, and statutes. Prerequisite: Education 253 or consent of instructor. One course. *Flowers, Martin, or Pittillo*

**260. Educational Research I.** Research design, univariate quantitative methods, and applications of the computer to research problems. One course. *Staff*

**261. Educational Research II.** Analysis of covariance and multiple regression, discriminant function analysis, computer applications in research. Prerequisite: Education 260 or its equivalent. One course. *Staff*

**262. Educational Research III.** Multivariate analysis of variance, factor analysis, cluster analysis, and path analysis. Education 262 is offered only in a block with Education 261. One course. *Staff*

**266. Basic Science for Teachers.** Natural and physical science through selected readings, the use of experiments and demonstrations, construction and use of equipment, and field studies. One course. *Staff*

**268. Seminar in Contemporary Educational Criticism.** One course. *Carbone, Di Bona, Johnson, or Martin*

**270. Junior and Community College.** History, philosophy, and roles. Introductory course for future teachers, counselors, or administrators in a two-year college. One course. *Hopkins*

**271. Instructional Systems for College and University Teaching.** Special attention to alternative systems, and the individualization of instruction for a heterogeneous student population. One course. *Hopkins*

**272. Teaching Communication Skills in Early Childhood Education.** From birth to age eight with emphasis on reading readiness and language growth. One course. *Adams*

**273, 274. Clinical Reading Practicum.** Experiences in the diagnosis and correction of reading disabilities in elementary and secondary students. Prerequisite: consent of instructor. Two courses. *Adams*

**276. The Teaching of High School Science.** Discussion, lectures, and collateral reading related to such topics as aims, tests, curriculum, classroom and laboratory procedure, field trips, and course and lesson planning for secondary-school science. One course. *Kuhn*

**285. Audiovisual Aids in Education.** Aims and psychological bases of audiovisual materials in the classroom. Offered in summer only. One course. *Staff*

**291. Public and Community Relations of Schools.** One course.

**DEPARTMENTAL MAJOR**

Majors in education are offered in elementary school education and science education. The department offers work leading to graduation with distinction. See the section on Honors in this bulletin.

Duke University is accredited by the National Council for Accreditation of Teacher Education for the preparation of elementary and secondary school teachers. The programs are also approved by the North Carolina Department of Public Education.

The program for students who intend to teach is designed to prepare them for positions in either elementary or secondary schools. Prerequisites for all prospective teachers are Psychology 102, 103, 104, or 105, preferably during the sophomore year; and Education 100 or 113. Only students with a C average or higher overall and in the major or teaching fields will be admitted to student teaching. Special methods courses should be taken prior to undergraduate student teaching, which is part of a planned professional semester in the senior year.

**Elementary Education.** A major in this program is designed for those students who desire to meet the certification requirements for teaching in the elementary school.

**Required General Courses**

English	1 course or by examination
Natural Science	2 courses
Mathematics	1 course
History 91, 92	2 courses
Political Science 91	1 course
Economics 115 or 120	1 course
Literature	1 course
Physical Education Activity	2 semesters

**Required Specialized Subject Matter Courses**

Physical Education (for Early Childhood or Intermediate Grades)	½ course
Health Education 134	½ course
Music Education 151, 152	1 course
Education 161, 162	1 course
Education 105	½ course
Education 106	½ course
Education 107	½ course
Education 108	½ course

**Required Professional Courses**

Education 100 or 113	1 course
Education 118	1 course
Education 195S	½ course
Education 196	1½ courses

A major in elementary education must include a concentration of at least six courses in subjects commonly taught in elementary school, chosen from one of the divisions—humanities, natural science, or social science. The concentration may include courses from the general education requirement.

**Secondary School Teaching.** Whatever their majors, students preparing to teach must consult the appropriate adviser in the Department of Education prior to each registration period to assure that they will be eligible to enter the required student teaching program. Students preparing to teach in a secondary school meet certification requirements by qualifying in one teaching field. Prospective secondary school teachers must major in a subject other than education. Qualifications for certification to teach a single science may be sought under either the A.B. or the B.S. degree. Students desiring to major in science education should read the description of that program given below.

**Science Education.** Students intending to teach sciences in secondary schools may major in science education. The program meets certification requirements and provides a broad background in several sciences. Early consultation with advisers in the Department of Education and a selected department in science is required. Six courses in education (100 or 113, 118, 215S, 216, 236, and 246, or 276) are required. The science education program requires two courses in mathematics and laboratory work in at least three sciences, with concentration in one of these, and must include a minimum of four advanced courses.

A major in science education leads to an A.B. degree with the normal thirty-two course limit. Students wishing to have the B.S. degree may expect to take more than thirty-two courses.

**Materials and Methods Courses.** Certain materials and methods courses on teaching various subjects in the public school curriculum are listed in the proper subject matter department. These courses are intended to meet requirements for teaching certificates.

## STUDENT TEACHING

During the period of student teaching, students may be required to live in a community which is some distance from Durham. This will entail additional living expenses to be borne by the student teacher. Room rent is not refunded.

## English

Professor Budd, *Chairman*; Associate Professor Butters, *Director of Undergraduate Studies*; Associate Professor Gerber, *Supervisor of Freshman Instruction*; Professors Anderson, Cady, Duffey, Ferguson, Gleckner, Nygard, Price, Randall, Reiss, Ryals, Smith, Turner, G. Williams and K. Williams; Associate Professors Applewhite, Clum, DeNeef, Jackson, Jones, Mellown, Michalak, Monsman, Reardon, and Strandberg; Assistant Professors Dearlove and Rohler

## WRITING AND LANGUAGE

**1. Freshman Composition.** Weekly expository themes based on British and American prose. One section of this course is reserved for students interested in creative writing. One course. *Staff*

**2. Intermediate Composition.** The grammar and mechanics of expository writing. Three class hours per week; frequent writing assignments. Priority given to freshmen, then sophomores. One course. *Staff*

**10. Introductory Composition and Literature.** A skills course in composition and literature (contemporary essays and short stories), with frequent writing assignments: five meetings each week and regular individual conferences. (This course, offered in the Summer Transitional Program, does not satisfy the English composition proficiency requirement.) One course. *Staff*

**65S, 66S. Imaginative Writing.** Informal essay, short story, poetry, drama, and film. Prerequisite: consent of instructor. Two courses. *Monsman*

**100. English for Foreign Students.** A noncredit course which includes an individual tutorial stressing writing and a small class emphasizing conversation and pronunciation. The tutorial is restricted to registered undergraduate and graduate foreign students. *Staff*

**101S. Advanced Expository Writing.** Techniques of effective writing. Priority given to seniors, then juniors. One course. *Staff*

**103S, 104S. Creative Writing.** Class discussion of students' manuscripts and individual conferences with the instructor. Open to sophomores, juniors, and seniors. Students desiring admission to either course should present a piece of writing to the instructor as early as possible during the preceding semester. Two courses. *Applewhite, Monsman, or Price*

**105S. The Composition of Prose Narrative.** The writing of a novel or novella or a group of short stories. Primarily for juniors and seniors; consent of instructor is required early in the preceding semester. One course. *Price*

**106S. The Writing of Poetry.** A study of meter, image, tone, and dramatic organization in traditional and modern poems as a basis for original composition. Prerequisite: consent of instructor. One course. *Applewhite*

**107. Introduction to Linguistics.** Origin and nature of language; methods of descriptive linguistics with reference to historical and comparative linguistics. (Also listed as Anthropology 107 and under Linguistics.) One course. *Staff*

**108. English Historical Linguistics.** Introduction to methods and principles of historical linguistics, as exemplified by the history of the English language from Proto-Indoeuropean to the present. (Also listed under Linguistics.) One course. *Butters or Nygard*

**109. English Grammar.** Origins, development, and current structure of English, especially in America. Transformational versus traditional and structural grammar; written versus spoken English; social and regional dialects. (Also listed under Linguistics.) One course. *Butters*

## ENGLISH AND AMERICAN LITERATURE

**Introduction to Literature.** One course each; English 26 may be taken twice.

20. (This number represents one course credit for advanced placement.)

21S. Studies in the Novel.

22S. Studies in Drama.

23S. Studies in the Short Story.

24S. Studies in Poetry.

25S. Studies in the Epic.

**26. Studies in Special Topics.** (Some sections are taught as seminars; see the *Schedule of Courses*.)

**55, 56. Representative British Writers.** First semester: selections from Chaucer, Shakespeare, Donne, and Milton. Second semester: Pope, Wordsworth, Keats, Browning, and Yeats. Two courses. *Staff*

**57, 58. Representative American Writers.** Selections and complete works. First semester: Poe, Emerson or Thoreau, Hawthorne, Melville, Whitman, Dickinson, and Twain. Second semester: James, Frost or Robinson, Crane or Dreiser,



O'Neill, Faulkner, Hemingway, and others. Prospective majors should take courses numbered 161-162, 171-172, instead of these courses. Two courses. *Staff*

**112. English Literature of the Middle Ages.** A study of the principal forms and examples of English prose, poetry, and drama of the Anglo-Saxon and Middle English periods (excluding Chaucer), read in translation. (Also listed under Medieval and Renaissance Studies.) One course. *Reiss*

**113. Chaucer.** *The Canterbury Tales* and the minor poems, with attention to their literary and social background. (Also listed under Medieval and Renaissance Studies.) One course. *DeNeef, Nygard, or Reiss*

**121. English Literature of the Sixteenth Century.** Emphasis in poetry on Wyatt, Sidney, Spenser, Raleigh, Shakespeare; in prose on Sidney and Florio's *Montaigne*; in drama on Marlowe. (Also listed under Medieval and Renaissance Studies.) One course. *DeNeef*

**125, 126. English Literature of the Seventeenth Century.** First semester: emphasis in poetry on Jonson and the cavaliers, Donne and the metaphysicals; in drama on Jonson, Tourneur, Webster, Ford; in prose on character writers, Bacon, Burton, Donne, Browne. Second semester: emphasis in poetry on later metaphysicals, Cowley, Denham, Waller, Dryden; in prose on Taylor, Dryden, Hobbes, Locke; in drama on Dryden, Congreve, Etherege, Wycherly. Two courses. *DeNeef or Randall*

**127. Milton.** Milton's poetry and prose, their relation to the period and to other great works of literature. (Also listed under Medieval and Renaissance Studies.) One course. *DeNeef or Price*

**131. Eighteenth-Century Literature.** Traditions and values of Augustan and post-Augustan literature with emphasis on genre and intellectual history. Addison, Swift, Pope, Gray, Johnson, Blake, and Defoe or Fielding are usually studied. One course. *Ferguson or Jackson*

**133. Studies in a Major British Author.** Readings in the works of such pre-1800 writers as Dryden, Fielding, Pope, or Johnson. One course. *Staff*

**138. The English Novel in the Eighteenth Century.** Defoe, Richardson, Fielding, Smollett, and Sterne; the Gothic novel. One course. *Ferguson or Jackson*

**141, 142. English Literature of the Early Nineteenth Century.** The course begins with the forerunners of Romanticism. The chief emphasis in the first semester is on the work of the older Romantics: Wordsworth, Coleridge, Lamb, and Hazlitt. In the second semester the chief emphasis is on the work of the younger Romantics: Byron, Shelly, Keats, and DeQuincey. Two courses. *Applwhite or Gleckner*

**143. Studies in a Major British Author.** Readings in the works of such post-1800 writers as Coleridge, Eliot, Wordsworth, or Yeats. One course. *Staff*

**145. English Literature, 1832-1900.** Major writers and genres, with special emphasis on Carlyle, Tennyson, Browning, Arnold, the pre-Raphaelites, and Hopkins. Collateral reading from novels. One course. *Harwell, Monsman, or Ryals*

**148. The English Novel in the Nineteenth Century.** Some of the writers studied are Scott, Austen, Dickens, Thackeray, Trollope, the Brontes, George Eliot, Meredith, Butler, and Hardy. One course. *Monsman or Ryals*

**151, 152. English Literature of the Twentieth Century.** Emphasis on principal writers of fiction, drama, and poetry. First semester: usually Conrad, Shaw, Yeats, Wells, Synge, Forster, Woolf, and Joyce. Second semester: usually Law-

rence, Cary, Huxley, Auden, Greene, Beckett, and Dylan Thomas. Two courses. *Dearlove, Mellown, or Smith*

**154. British Poetry of the Twentieth Century.** Changes in poetry and its criticism from the Edwardians. Yeats, Housman, Lawrence, Owen, the Sitwells, Graves, Auden, MacNeice, Dylan Thomas, Hughes, and Larkin. One course. *Dearlove, Mellown, or Smith*

**158. The English Novel in the Twentieth Century.** Some of the writers studied are Conrad, Lawrence, Forster, Joyce, Woolf, Huxley, Cary, Amis, and Golding. One course. *Dearlove, Mellown, or Smith*

**161. American Literature to 1800.** Colonial authors, Bradford, Taylor, Cotton Mather, Edwards, Byrd, and Franklin, and authors of the early Republic such as Tyler, Freneau, and C. B. Brown. One course. *Jones*

**162. American Literature, 1800 to 1860.** Prose and poetry of American Romanticism: Emerson, Thoreau, Hawthorne, Poe, Melville, and Whitman. (Not open to students who have taken English 57.) One course. *Anderson, Budd, Cady, Jones, or K. Williams*

**163. Studies in a Major American Author.** Readings in the works of such writers as Faulkner, Hawthorne, James, or Whitman. One course. *Staff*

**164. American Poetry of the Twentieth Century.** The classicism of Pound, Eliot, and the Fugitives in relation to the neoromanticism of Stevens, Williams, Crane, and Roethke. Developments during World War II and after: Lowell, Jarrell, Berryman, Dickey, Levertov, and Wright. One course. *Applewhite, Duffey, or Strandberg*

**171. American Literature, 1860 to 1915.** Dickinson, Twain, James, the social and philosophical essayists, Crane, Dreiser, Robinson, and Frost. (Not open to students who have taken English 58.) One course. *Anderson, Budd, Cady, Clum, Jones, or K. Williams*

**172. American Literature, 1915 to 1960.** Eliot, Fitzgerald, Hemingway, Faulkner, and their contemporaries. One course. *Duffey or Strandberg*

**173, 174. Afro-American Literature.** First semester: oral and written literary traditions from the American colonial period into the nineteenth century, including the spiritual as lyric poetry and the slave narrative as autobiography. Second semester: The late nineteenth and the twentieth centuries, Paul Laurence Dunbar to Cyrus Colter. (Also listed as Afro-American Studies 173, 174.) Two courses. *K. Williams*

**175. Contemporary American Writers.** Novelists and poets prominent in the recent past. One course. *Duffey or Strandberg*

**177, 178. American Fiction.** A survey of the novel and the short story. First semester: nineteenth century from Washington Irving to Stephen Crane. Second semester: twentieth century through ten representative books. Two courses. *Anderson, Budd, or Clum*

**Conference Courses.** Seminars primarily for majors, with priority given to seniors. Emphasis on literary theory and critical writing with intensive study of one or more authors. One course each; each course may be taken twice.

**180S. Conference on Criticism.**

**181S. Conference on Drama.** (Also listed as Drama 181S.)

**182S. Conference on Poetry.**

**183S. Conference on Fiction.**

## 184S. Conference on Prose Nonfiction or a Special Topic.

191, 192, 193, 194. **Independent Study.** Directed reading and research. Students should consult the Director of Undergraduate Studies as early as possible in the semester preceding enrollment. Up to one course each. *Staff*

195T. **Tutorial.** Directed reading and research. Prerequisite: consent of the Director of Undergraduate Studies in the preceding semester. One course. *Staff*

197T, 198T. **Distinction in English.** Interested students should discuss these courses with the Director of Undergraduate Studies early in the second semester of their junior years. Two courses. *Staff*

## FOREIGN LITERATURES (IN ENGLISH)

165. **Ibsen and Strindberg.** Selected plays in translation read in their Scandinavian context; their significance for realism, symbolism, and the principle of dissociation in twentieth-century drama. (Also listed as Drama 147.) One course. *Anderson*

166. **The Bible as Literature.** Detailed study of selected books of Old and New Testament and Apocrypha, emphasizing their literary form and artistry and their various expressions in world literature. Course will also include a history of the Bible in English. One course. *Reiss*

167. **Canadian Literature in English.** Survey of nineteenth-century writers. Emphasis on twentieth-century poets and novelists such as E. J. Pratt, F. R. Scott, A. J. M. Smith, Earle Birney, Sinclair Ross, Hugh MacLennan, Irving Layton, Leonard Cohen, and Margaret Atwood. One course. *Staff*

168. **Readings in European Literature.** Works of European literature related to similar works in English: Montaigne, Rabelais, Cervantes, Voltaire, Dostoevsky, and others. One course. *Staff*

188. **The Origins and Aims of Narrative.** Readings in ancient, middle, and modern narrative literature—epic, tale, drama, novel—with attention to the origins of the narrative impulse, its evolution from sacred to secular, its deducible purposes, and its present manifestations. One course. *Price*

## SPEECH

50. **Essentials of Public Speaking.** A basic course in public speaking, designed to give the student the poise and confidence necessary to think and speak freely before an audience. Particular attention is paid to the gathering and organization of speech materials and to oral presentation. Not open ordinarily to juniors and seniors. One course. *Michalak or Rohler*

110. **Essentials of Public Speaking.** A basic course in public speaking for juniors and seniors dealing with the same matters as English 50. (Not open for credit to students who have taken English 50.) One course. *Michalak or Rohler*

120. **The Speaking Voice.** Mechanisms of speech; skills necessary for the improvement of voice, pronunciation, and diction. Methods of correcting minor functional speech disorders. One course. *Staff*

140S. **Argumentation.** The principles of argumentation and debating. The techniques of analysis, investigation, evidence, reasoning, brief making, and refutation. Participation in class discussion and debates. Prerequisite: consent of instructor. One course. *Rohler*

**150. Persuasive Speaking.** The psychological and sociological techniques used in gaining acceptance of ideas through speech. Study is made of the factors influencing human behavior; audience analysis and motivation; choice, arrangement, and adaptation of material. Extensive practice in persuasive speaking. One course. *Rohler*

**160, 170. Broadcasting.** A study of the background of radio and television broadcasting. First semester: the development of broadcasting as an industry and as a literary form. Second semester: legal and social aspects, and various program forms. Two courses. *Rohler*

## DRAMA AND FILM

**59. Film Criticism.** Introduction to principles of writing about the cinema. (Also listed as Drama 59.) One course. *Clum, Jones, Monsman, or Strandberg*

**119. History of the Theater.** The origin and development of drama, acting, and stagecraft from ancient Greece to the modern European and American theater. (Also listed as Drama 119.) One course. *Clum or Reardon*

**123, 124. Shakespeare.** First semester: twelve plays before 1600. Second semester: about ten plays after 1600. (Also listed as Drama 141, 142 and under Medieval and Renaissance Studies.) Two courses. *DeNeef, Jones, or G. Williams*

**129. English Drama from the Middle Ages through the Eighteenth Century.** Emphasis on Tudor and Stuart drama, exclusive of Shakespeare. (Also listed as Drama 143 and under Medieval and Renaissance Studies.) One course. *Clum or Reardon*

**159. English and Irish Drama of the Nineteenth and Twentieth Centuries.** Emphasis on the modern period. (Also listed as Drama 144.) One course. *Clum or Reardon*

**169. Modern European Drama.** Ibsen to the present; the free theater movement and the drama of ideas. (Also listed as Drama 145.) One course. *Clum or Reardon*

**179. American Drama.** Representative plays from Colonial times to the present: an historical survey. (Also listed as Drama 146.) One course. *Clum or Reardon*

## For Juniors, Seniors, and Graduates

**207. Old English Grammar and Readings.** (Also listed under Linguistics and under Medieval and Renaissance Studies.) One course. *Nygard or Reiss*

**208. History of the English Language.** Introductory survey of the changes in sounds, forms, and vocabulary of the English language from its beginning to the present, with emphasis on the evolution of the language as a medium of literary expression. (Also listed under Linguistics and under Medieval and Renaissance Studies.) One course. *Nygard or Reiss*

**209. Present-Day English.** A description of present-day American English from the point of view of modern linguistic theory; comparison of traditional and structural grammars; semantic change; the relation of the written to the spoken language; usage. (Also listed under Linguistics.) One course. *Butters, Nygard, or Reiss*

**210. Old English Literary Tradition.** Prerequisite: English 207. (Also listed under Medieval and Renaissance Studies.) One course. *Nygard or Reiss*



**212. Middle English Literary Tradition.** From 1100 to 1500 (excluding Chaucer); medieval genres; reading of selected texts. A reading knowledge of Middle English is recommended. (Also listed under Medieval and Renaissance Studies.) One course. *Nygard or Reiss*

**215. Chaucer.** *The Canterbury Tales*. (Also listed under Medieval and Renaissance Studies.) One course. *Nygard or Reiss*

**216. Chaucer.** *Troilus and Criseyde* and the minor poems. (Also listed under Medieval and Renaissance Studies.) One course. *Nygard or Reiss*

**221. English Prose and Poetry of the Sixteenth Century.** Readings in the major nondramatic forms and authors from Sir Thomas More to John Donne, excluding Spenser's *Faerie Queene*. One course. *DeNeef*

**223. Spenser.** (Also listed under Medieval and Renaissance Studies.) One course. *DeNeef*

**224. Shakespeare.** The plays. (Also listed under Medieval and Renaissance Studies.) One course. *G. Williams*

**225, 226. Tudor and Stuart Drama, 1500-1642.** First semester: Peele, Lyly, Greene, Kyd, Dekker, Heywood, Chapman, and Marston, with emphasis on Marlowe. Second semester: Jonson, Webster, Beaumont, Fletcher, Massinger, Middleton, Ford, and Shirley. (Also listed under Medieval and Renaissance Studies.) Two courses. *Randall*

**229, 230. English Literature of the Seventeenth Century.** First semester: prose and poetry from 1600 to 1660. Second semester: prose, poetry, and drama from about 1660 to 1700. (Also listed under Medieval and Renaissance Studies.) Two courses. *DeNeef (229), Jackson (230), Randall (229, 230), or G. Williams (229)*

**232. Milton.** Milton's poetry and prose, with emphasis on the major poems. (Also listed under Medieval and Renaissance Studies.) One course. *Staff*

**234. English Drama, 1642-1800.** The heroic play and comedy of manners of the Restoration; the important plays, serious and comic, of the eighteenth century. One course. *Jackson*

**235, 236. The Eighteenth Century.** First semester: Swift, Pope, Defoe, Addison, Steele, and others. Second semester: Gray, Johnson, Boswell, Collins, Goldsmith, the novelists, and other writers. Two courses. *Ferguson or Jackson*

**241, 242. English Literature of the Early Nineteenth Century.** First semester: poets and prose writers, 1790-1810, with emphasis on Wordsworth and Coleridge. Second semester: 1810-1830, with emphasis on Byron, Shelley, and Keats. Two courses. *Gleckner or Monsman*

**245, 246. English Literature of the Later Nineteenth Century.** First semester: Carlyle, Dickens, Thackeray, Tennyson, and Browning. Second semester: Arnold, Ruskin, Pater, George Eliot, Meredith, the Pre-Raphaelites, and Swinburne. Two courses. *Monsman or Ryals*

**251, 252. English Literature of the Twentieth Century.** Representative work of leading writers from 1900 to 1950, in fiction, drama, and poetry. First semester: Shaw, Conrad, Yeats, Wells, Bennett, Galsworthy, Ford, Synge, Forster, and Lawrence. Second semester: Joyce, Woolf, Edith Sitwell, Eliot, Huxley, Graves, Bowen, Auden, and Dylan Thomas. Critical analysis of selected texts, with discussion of techniques and ideas. Two courses. *Mellown or Smith*

**263, 264. American Literature, 1800-1865.** Emphasized in the first semester are Emerson, Thoreau, and Hawthorne; in the second semester, Poe and Melville. Two courses. *Anderson, Jones, or Turner*

**267, 268. American Literature, 1865-1915.** Selected works of representative authors. First semester: Whitman, Mark Twain, James, Howells, Dickinson, and the Local Colorists. Second semester: Crane, Norris, Dreiser, Cather or Wharton, O'Neill, Robinson, and Frost. Two courses. *Budd, Cady, or K. Williams*

**270, 271. Southern Literature.** Emphasis in the first semester is on Byrd, Kennedy, Simms, Poe, Timrod, and the humorists; in the second, on Lanier, Harris, Cable, Twain, Glasgow, and Faulkner. Two courses. *Turner*

**275, 276. American Literature since 1915.** First semester: selected fiction from Gertrude Stein to the present. Second semester: poetry from the Imagist movement to the present. Two courses. *Duffey or Strandberg*

**280. Introduction to Folklore.** A survey of the materials of popular tradition, the folksong, the folktale, the proverb, the riddle, and other forms; the methods of folklore investigation; and the relation of these popular genres to literary tradition. One course. *Nygard*

**285. Literary Criticism.** Readings from the major critics, Plato to the eighteenth century, with emphasis on formative ideas and historical continuity. One course. *Jackson*

**287. Theory of Literature from Kant to the Present.** A survey of literary theory: intellectual currents of Romanticism, the classic revival, the realistic schools, symbolism, the recent analytic schools. One course. *Duffey*

## DEPARTMENTAL MAJOR

*Basic Requirement.* English 55-56.

*Major Requirements.* Seven courses at the 100-level or above. One course in a major author; three courses in period surveys, one in each division: (a) British Literature before 1800, (b) British Literature after 1800, (c) American Literature; and three additional courses.

In choosing the three additional courses, students should carefully consider with their advisers the opportunities available in the departmental offerings for concentration in English or American literature; in poetry, fiction, or dramatic literature; in historical periods; in critical theory, linguistics, or creative writing; or in speech and theater.

The English department recommends that its majors complete at least two years of college-level study, or the equivalent, of a foreign language. Those majors contemplating graduate work in English should note that many master's programs require examination in one foreign language and that doctoral programs commonly require examination in two.

*Honors.* The department offers work leading to graduation with distinction. For further information consult the director of undergraduate studies and the section on honors in this bulletin.

## Forestry and Environmental Studies

Students in arts and sciences who are preparing for professional careers in natural resources and the environment should refer to the section on professional combination programs in this bulletin. The courses listed below are open to undergraduate students in arts and sciences by consent of the instructor. The courses are described in the *Bulletin of the School of Forestry and Environmental Studies*.

**191, 192. Independent Study.** Directed reading and research. Open to qualified students in junior and senior years by consent of the student's academic dean and of the School of Forestry and Environmental Studies. Credit to be arranged. *Staff*

**152. Conserving Natural Resources.** One course. *Staff*

**204. Microclimatology.** Prerequisites: introductory courses in calculus and physics. One course. *Knoerr*

**206. Anatomy of Woody Plants.** One course. *Philpott*

**215. Air Pollution Meteorology.** Prerequisite: a course in general meteorology. (Course sponsored by Triangle Universities Consortium on Air Pollution and taught by faculty from North Carolina State University.) One course. *Staff*

**217. Environmental Instrumentation.** (Also listed as Botany 217L.) One course. *Knoerr*

**222. Biology of Forest Insects and Diseases.** Prerequisites: introductory courses in biology and physiology. One course. *Anderson and Stambaugh*

**233. General Entomology.** Prerequisite: Forestry 222 or equivalent. One course. *Anderson*

**241. Dendrology (Taxonomy of Forest Trees).** Prerequisite: introductory course in botany. One course. *White*

**250. Biometry.** Prerequisite: introductory courses in calculus. One course. *Yandle*

**269. Resource Economics and Policy.** Prerequisite: introductory course in economics. One course. *Convery*

**273. Economics and Environmental Quality.** Prerequisite: introductory course in economics. One course. *Convery*

## French

For courses offered in French, see *Romance Languages*.

## Genetics—The University Program

Professor Guild, *Director*, (biochemistry); Professors Amos (microbiology and immunology), Antonovics (botany), Boynton (botany), Burns (microbiology), Gillham (zoology), Gross (biochemistry), C. Ward (zoology), and Webster (biochemistry); Associate Professors Counce (anatomy), Greene (biochemistry), and F. Ward (microbiology and immunology); Assistant Professors Endow (microbiology), Greenleaf (biochemistry), V. Hershfield (microbiology), M. Hershfield (biochemistry and medicine), Holmes (biochemistry and medicine), Kredich (biochemistry and medicine), Modrich (biochemistry), Schachat (anatomy), and Steege (biochemistry)

The University Program in Genetics provides a coherent course of study in all facets of biology related to genetics. Students interested in preparation for advanced work in genetics or wishing to take an interdisciplinary major in this area should consult Dr. Gillham (0082 Biological Sciences Building). Information concerning interdisciplinary programs involving biology should be discussed with the appropriate Directors of Undergraduate Studies.

The following courses are described in the listing of the specified departments:

**Introduction to Genetics.** (Zoology 117.) One course. *Ward*

**Principles of Genetics.** (Botany 180, Botany 180L, Botany 280, Botany 280L, Zoology 180, Zoology 180L, and Zoology 280.) One course. *Antonovics, Boynton, and Gillham*

**Evolutionary Mechanisms.** (Botany 286 and Zoology 286.) One course. *Antonovics and H. Wilbur (zoology)*

**Molecular Genetics.** (Biochemistry 216.) One course. *Guild and staff*

**Experimental Genetics.** (Biochemistry 282.) Half-course. *Modrich and staff*

**Extrachromosomal Inheritance.** (Botany 283 and Zoology 283.) One course. *Boynton and Gillham*

**Current Topics in Genetic Mechanisms.** (Biochemistry 284.) Half-course. *Staff*

**Population Genetics.** (Botany 285S.) One course. *Antonovics*

**Quantitative Genetics.** (Botany 287S.) One course. *Antonovics and staff*

**The Cell in Development and Heredity.** (Anatomy 288 and Zoology 288S.) Half-course. *Counce*

*Independent Study* and *Special Problems* are offered in the Department of Botany under numbers 191, 192, 193, 194, 225, and 226, and in the Department of Zoology under numbers 191, 192, 193, and 194. Students should obtain the consent of both the instructor with whom they wish to work and the appropriate Director of Undergraduate Studies before registering for these courses.

## Geography

For courses in Geography, see *Economics*.

## Geology

Professor Perkins, *Chairman*; Associate Professor Lynts, *Director of Undergraduate Studies*; Professors Heron and Pilkey; Associate Professor Furbish; Assistant Professor Rosendahl

**1. Geological Environments and Man.** Physical and chemical environments acting on the earth with special emphasis on their interaction with man. Three lectures and proficiency sessions. One course. *Heron or Perkins*

**3. Environmental Geology.** Earth processes and materials, as related to man. Lectures, field trip, and eight hours of mini-lab. Not open to those who have completed Geology 1. One course. *Heron*

**10. Analysis of Outcrops.** Field interpretation of geologic features. A four-hour field trip once a month. Prerequisite: Geology 1 or 3 (may be taken concurrently). Half-course. *Staff*

**53. Introductory Oceanography.** Basic principles of physical, chemical, biological, and geological oceanography. Prerequisite: one course in a laboratory science. (Also listed as Botany 53.) One course. *Pilkey and Searles (botany)*

**72. History of the Earth.** Physical and biological evolution of the earth from the viewpoint of the global tectonics. Primarily for science majors. Lectures, laboratory sessions, weekend field trip through the Appalachians, and Saturday



field trip through the Deep River Triassic Basin. Prerequisite: Geology 1 or consent of instructor. One course. *Lynts*

**101. Crystallographic and Optical Mineralogy.** The crystalline state, lattice concepts, indices, systems, morphology, and classification; light optics theory and its application to mineral structures. Lectures and laboratory. Prerequisites: Chemistry 11 (may be taken concurrently). Fall. One course. *Furbish*

**102. Fundamentals of Mineralogy.** Crystal chemistry, crystal physics, mineral identification, and genesis. Lectures or recitations, laboratory, and field trips. Prerequisites: Chemistry 12 (may be taken concurrently) and Geology 101. One course. *Furbish*

**106. Igneous and Metamorphic Rocks.** Silicate mineralogy, theory of origin and classification of igneous and metamorphic rocks and rock identification. Lectures and laboratory. Prerequisite: Geology 102. One course. *Furbish*

**108. Sedimentary Rocks.** Authigenic and detrital minerals, theory of origin and classification of sedimentary rocks and rock identification. Lecture, laboratory, and field trips. Prerequisite: Geology 1. One course. *Heron*

**164. Introduction to Geologic Field Methods.** Principles and techniques used in geologic mapping and field studies including applicable methods of surveying and the use of aerial photographs. Lectures, laboratory, and field trips. Prerequisites: Geology 1 and 72. One course. *Furbish*

**168. Introductory Geological Oceanography.** A study of elementary geological principles relating to the modern oceans. Field observations of beach and estuarine processes and the study of historical development of the ocean basins. Prerequisite: introductory geology course or consent of instructor. (Also listed under Marine Sciences.) (Given at Beaufort.) One and one-half courses. *Goll*

**169. Ecological Oceanography.** Students may not receive credit for both Zoology 103L and 169. Prerequisites: introductory biology and introductory mathematics. (Also listed as Botany 169L and Zoology 169L.) (Given at Beaufort.) One course. *Sutherland*

**171. Marine Sciences Seminar.** For description see Marine Sciences.

**191, 192. Independent Study.** Directed reading or research. Open only to qualified juniors and seniors by permission of the Director of Undergraduate Studies and supervising instructor. (Also listed under Marine Sciences.) Two courses. *Staff*

**195. Problems in Earth Science.** Open to qualified nonmajor juniors and seniors upon approval of the department. One course. *Staff*

**196S. Beach and Island Geological Processes.** Processes affecting evolution of beaches and barrier islands with emphasis on how man-made structures affect them. (Given at Beaufort on three weekends.) (Also listed under Marine Sciences.) Half course. *Pilkey*

### For Advanced Undergraduates and Graduates

**205. Geological Oceanography.** Broad geological aspects of the ocean basins including origin, bottom physiography, sediment distribution, submarine sedimentary processes and shoreline processes. Field observations; sampling procedures. Not open to students who have completed Geology 206S. (Also listed under Marine Sciences.) (Given at Beaufort.) One and one-half courses. *Glaeser and Pilkey*

**206S. Principles of Geological Oceanography.** A survey of geological aspects of the oceans including sediment types, processes of sedimentation, geologic structures of the ocean basins, and bottom physiography. Not open to students who have had Geology 205. Prerequisite: Geology 108 or consent of instructor. One course. *Pilkey*

**211S. Stratigraphic Principles and Application.** Prerequisite: Geology 108. One course. *Perkins*

**212. Carbonate Facies Analysis: Recent and Ancient.** Origin, distribution, and diagenetic alteration of recent carbonate sediments and their ancient analogs. Prerequisite: Geology 211S. Given biennially in the spring. One course. *Perkins*

**213. Sedimentology.** Parameters of sedimentation, sediment classification, and laboratory methods of analysis. Lectures and laboratory. Given biennially. One course. *Pilkey*

**214S. Sedimentary Petrography.** Descriptive and interpretive analysis of sediments and sedimentary rocks in thin section, with an emphasis on diagenesis. Prerequisite: consent of instructor. Spring. One course. *Perkins*

**215. Clastics Facies Analysis: Recent and Ancient.** Origin, distribution, and diagenetic alteration of recent and ancient clastic sequences. Prerequisite: Geology 211S. Given biennially. One course. *Heron*

**229. Economic Geology.** Principles and processes involved when elements are concentrated to economic proportions in magmatic, metamorphic, hydrothermal, sedimentary, or surface environments. Prerequisites: Geology 102. One course. *Furbish*

**230. Principles of Structural Geology.** Description, origin, and interpretation of primary and secondary geologic rock structures. Prerequisites: Geology 106 and 108. One course. *Rosendahl*

**234S. Geochemistry.** Concentration on magmatic and thermal processes. Prerequisites: Geology 106 and Physics 52, or consent of instructor. One course. *Rosendahl*

**235S. Global Tectonics.** Sea-floor spreading, geometry of plate tectonics, and relationship of plate tectonics to geology. Prerequisites: Geology 230 and 251. Given biennially in the fall. One course. *Lynts and Rosendahl*

**241. Invertebrate Paleobiology I.** Basic concepts of taxonomy and evolution; biologic and stratigraphic relationships of lower invertebrates and their phylogeny. Lectures and laboratory. Prerequisites: Geology 72, or consent of instructor. Given biennially in the fall. One course. *Lynts*

**242. Invertebrate Paleobiology II.** Biologic and stratigraphic relationships of higher invertebrates and their phylogeny. Lectures and laboratory. Prerequisites: Geology 241. Given biennially in the spring. One course. *Lynts*

**243-244. Micropaleontology.** Microscopic animal and plant fossils, exclusive of spores and pollen, with special emphasis on their biology, taxonomy, evolution, and stratigraphic distribution. Lectures and laboratory. Prerequisites: Geology 241 and 242, or consent of instructor. Given biennially. Two courses. *Lynts*

**247. Paleoecology.** Application of ecologic and geologic principles to the reconstruction of the interrelationship between organisms and their environment in geologic time. Prerequisites: Geology 108, 242, or consent of instructor. Given biennially. One course. *Lynts*

**250. Introduction to Marine Geophysics.** Topics include seismic reflection and refraction, magnetics, gravity, and seismology. Prerequisite: introductory physics or consent of instructor. (Also listed under Marine Sciences.) (Given at Beaufort.) One and one-half courses. *Rosendahl*

**251. Principles of Geophysics.** Theory, techniques, and interpretation. Aspects of seismology, geomagnetism, gravity, and heat flow. Prerequisites: Physics 52, Calculus 32, and Geology 1, or consent of instructor. One course. *Rosendahl*

**252. Marine Geophysics.** Survey of methods in the study of the oceanic crust and mantle. Prerequisite: Geology 251 or consent of instructor. Given biennially. One course. *Rosendahl*

**253S. Seminar in Geophysics.** Principal geophysical techniques and their application to problems in earth science. Prerequisite: Geology 251, or concurrent enrollment and consent of instructor. Given annually. One course. *Rosendahl*

**260S. Hydrocarbon Exploration.** Origin, migration, and accumulation of hydrocarbons with emphasis on exploration techniques. Prerequisites: Geology 211S and 251. Given biennially in the spring. One course. *Perkins and Rosendahl*

## DEPARTMENTAL MAJOR

### The A.B. Degree

*Prerequisites.* Geology 1 and 72, Chemistry 11 and 12, and Mathematics 31 and 32.

*Major Requirements.* A minimum of eight geology courses above the introductory levels, including 101, 102, 106, 108, 211, and 230.

### The B.S. Degree

The Department of Geology offers two programs:

1. *Geology: Preparatory to Advanced Studies in Geology*

*Prerequisites.* Geology 1 and 72; Chemistry 11 and 12; Mathematics 31, 32; Physics 41 and 42 or 51 and 52; and Computer Science 51.

*Major Requirements.* A minimum of ten courses above the introductory level including 101, 102, 106, 108, 211, 230, plus a field course normally taken during the summer of the junior year.

2. *Geology: Preparatory to Advanced Studies in Oceanography*

*Prerequisites.* Geology 1 and 72, and 53 (or 206); Chemistry 11 and 12; Physics 41 and 42 or 51 and 52; Biology 11 and 12 or Biology 14; Mathematics 31 and 32, and three courses of science electives.

*Major Requirements.* A minimum of seven geology courses above the introductory level, including 101, 102, 106, 108, 211S, and 230.

## Germanic Languages and Literature

Professor Phelps, *Chairman*; Assistant Professor Bessent, *Director of Undergraduate Studies*; Assistant Professor Rosenberg, *Supervisor of Freshman Instruction*; Professor Jantz; Associate Professors Alt, Borchardt, and Rolleston

**1-2. Elementary German.** Practice in understanding, speaking, reading, and writing. Classroom techniques are combined with those of the language laboratory. Two courses. *Rosenberg and staff*

**63. Intermediate German.** Prerequisite: German 1-2 or equivalent. One course. *Staff*

German 63 is usually followed by 101, 117S, or 182.

**101. Introduction to German Literature.** Readings from representative German authors. One course. *Bessent*

**103S, 104S. Undergraduate Seminars.** One topic each semester to be chosen from the following: Literature and the Third Reich (Rolleston); The High Middle Ages (Rosenberg); Intellectual Background of Nineteenth-Century Literature (Alt); or other topics. Two courses.

**105. Composition.** Syntax with practice in the elements of German expository style, recommended for majors. One course. *Bessent and staff*

**109S. Nineteenth-Century Prose Fiction.** Emphasis on shorter forms: novelle, fairytale, legend. One course. *Bessent*

**115S. Drama.** Development of German Drama and stagecraft from *Sturm und Drang* to Brecht's Epic Theater. (Also listed as Drama 155S.) One course. *Alt*

**117S, 118S. German Conversation and Composition.** Primarily conversation with oral and written reports, based on works by contemporary writers of East and West Germany. Required for German majors and other students by consent of instructor. Two courses. *Bessent*

**119S. German Literature to the Goethezeit.** Survey of German literature and its cultural backgrounds from the beginning through the Enlightenment. One course. *Alt or Rolleston*

**125. German Literature to World War I.** Selected nineteenth- and early twentieth-century texts to explore and define elements of the Modern. Kleist, Hoffmann, Büchner, Heine, Nietzsche, Thomas Mann. One course. *Rolleston*

**126. German Literature since World War I.** From Expressionism to the present, the social and intellectual contexts. Mann, Kafka, Rilke, Böll, Grass. One course. *Rolleston*

**127. Contemporary Germany.** The current literary scene in the two Germanies in its cultural, social, and political contexts. One course. *Bessent*

**130. German Life and Thought.** German cultural and intellectual history. Reading and discussion in English. One course. *Borchardt*

**131. Goethezeit.** Goethe and his contemporaries: representative texts and the philosophical background. One course. *Phelps*

**132. The Romantics.** Major writers of the Romantic movement (1795-1830) considered in their national and international context. One course. *Rolleston*

**171. German Literature before 1900 in English Translation.** One course. *Borchardt*

**172. Modern German Literature in English Translation.** Representative works by such writers as Mann, Kafka, Hesse, Brecht, Böll, and Grass. One course. *Borchardt*

**173. Goethe's Faust in English Translation.** The poem, its place in world literature, its cultural and historical backgrounds. One course. *Borchardt*

**174. Brecht's Theater.** Theory and practice of Epic Theater in the light of Expressionist film and subsequent developments in drama. One course. *Borchardt*

**181. German for Reading, I.** Foundations of German grammar and syntax; emphasis on vocabulary and complex verbal structures. Not open for credit to



students who have completed German 1 and 2 or the equivalent. One course. *Staff*

**182. German for Reading, II.** Advanced reading practice with intensive grammar review; scholarly and technical selections flexibly chosen to accommodate individual student needs. Not open for credit to students who have completed German 1 and 2 or the equivalent. One course. *Staff*

**191, 192. Independent Study.** Directed reading and research. Open only to qualified students in the junior year, by consent of the department. Two courses. *Alt, Bessent, Borchardt, Phelps, Rolleston, or Rosenberg*

**193, 194. Independent Study.** Directed reading and research. Open only to qualified students in the senior year, by consent of the department. Two courses. *Alt, Bessent, Borchardt, Phelps, Rolleston, or Rosenberg*

### For Seniors and Graduates

**200. Proseminar.** Fundamental course for advanced study of German; literary history, schools of criticism, practical exercises in interpretation, and research methods. One course. *Borchardt*

**201S, 202S. Goethe.** His life and works, in the light of his lasting significance to Germany and world literature. First semester: lyrics, prose, fiction, and selected dramas; second semester: *Faust I & II*. Two courses. *Jantz or Phelps*

**203S. Eighteenth Century.** Eighteenth-century German literature in its relation to European intellectual currents of that time. One course. *Phelps*

**205, 206. Middle High German.** The language and literature of Germany's first classical period. (Also listed under Linguistics and under Medieval and Renaissance Studies.) Two courses. *Rosenberg*

**207S. German Romanticism.** The principal writers of the period from 1795 to 1830. One course. *Rolleston*

**209S. Drama.** Studies in the German-speaking theater with emphasis on the nineteenth century. One course. *Alt*

**211S. Nineteenth-Century Literature.** From the end of Romanticism through Realism. One course. *Alt*

**214S. The Twentieth Century.** Literature of the twentieth century presented through representative authors. One course. *Rolleston*

**215S. Seventeenth-Century Literature.** Leading writers of the Baroque, viewed against the background of their time. (Also listed under Medieval and Renaissance Studies.) One course. *Borchardt*

**216. History of the German Language.** Development of the phonology, morphology, and syntax of German from the beginnings to the present. (Also listed under Linguistics and under Medieval and Renaissance Studies.) One course. *Rosenberg*

**217S. Renaissance and Reformation Literature.** The period from 1400 to about 1600. (Also listed under Medieval and Renaissance Studies.) One course. *Borchardt*

**218S. The Teaching of German.** A survey of modern teaching techniques; problems in the teaching of German on the secondary and college levels. Analysis and evaluation of textbooks and related audiovisual materials. One course. *Phelps*

**219. Applied Linguistics.** The application of modern linguistic principles to a systematic study of the phonetics, morphology, and syntax of modern German. Prerequisite: consent of the instructor. (Also listed under Linguistics.) One course. *Rosenberg*

**230. Lyric Poetry.** Studies in poetry and poetic theory. From Goethe and the Romantics to Rilke, Benn, and contemporary authors. One course. *Rolleston*

## YIDDISH

**171. Yiddish Fiction in Translation.** Representative works of the classics (Mendele, Peretz, Sholem Aleichem, Asch, Goldfaden) as well as of selected poets. (Also listed under Judaic Studies.) One course. *Alt*

**181, 182. Elementary Yiddish.** A thorough study of elementary Yiddish grammar with reading, composition, and oral practice. No previous knowledge of German or Hebrew required. (Also listed under Judaic Studies and under Linguistics.) Two courses. *Alt*

**191, 192. Independent Study.** Two courses. *Alt*

## DEPARTMENTAL MAJOR

*Prerequisites.* Elementary and intermediate German.

*Major Requirements.* Conversation and composition (German 117S, 118S, or equivalent), plus six advanced courses, three of which must be on the 200-level. The following courses may not be used to fulfill major requirements: 171, 172, 173, 174, 181, 182.

*Honors.* Any student who is qualified (see the section on honors in this bulletin for general requirements) may undertake work toward a degree with distinction in German by applying to the chairman or departmental representative for the honors program. In addition to meeting the requirements of a major in the department, the candidate for graduation with distinction is encouraged to take one or more courses in independent study. Further information is available at the departmental office, 104 Languages Building.

## Greek

For courses in Greek, see *Classical Studies*.

## Health, Physical Education, and Recreation

Professor Friedrich, *Chairman*; Associate Professor Skinner, *Director of Undergraduate Studies*; Professors Bookhout, Buehler, and Falcone; Associate Professors Eddy, Harvey, LeBar, Lloyd, Persons, Riebel, Spangler, Woodyard, and Wray; Assistant Professor Raynor; Instructor Howard; Part-time Instructors Blumenfeld, Dorrance, Ennis, Espey, Harris, Leonard, Miller, and Myers

### PHYSICAL EDUCATION ACTIVITY COURSES

The activity courses listed below may be taken by men and women unless otherwise indicated. Each course carries a half-course credit and is given on a pass/fail basis. The maximum amount of credit which a student may earn for elective activity courses is one full course.

**4. Beginning and Intermediate Equitation.** Including trail riding for those with good control in the canter. Experience unnecessary. Fee of \$96 covers twenty-four mounted lessons and one in stable management. Half-course. *Swanson*

**6. Equitation: Hunt Seat.** Riding according to United States Pony Club standards. Position at all paces, increase and decrease of pace, turns, circles, jumping. Trail rides. Fee of \$110 for twenty-four mounted lessons and two on saddlery. Half-course. *Gosling*

**7. Equitation: Combined Training.** Dressage, cross-country, and stadium jumping. Prerequisites: ownership of horse; the United States Combined Training Preliminary Level or the United States Pony Club "B" rating. Fee of \$50 per semester. Half-course. *Gosling*

**10. Individual Activity Programs.** Varies with student's objectives. Prerequisite: consent of instructor. Half-course. *Skinner*

**11, 12. Adapted Physical Education.** Program supervised by physical therapist for students with medical problems: exercises, conditioning, rehabilitation, or special activities to meet individual needs. Two half-courses. *Riebel*

**14. Tension Control.** Basic skills and practice in recognizing, controlling, and reducing tension. Techniques including Jacobson's Progressive Relaxation, autogenic procedures, and meditative methods. Half-course. *Riebel*

**15. Individual Development: Aerobics, Weight Training, Conditioning.** A planned program of progressive, cumulative, and measurable physical activities adapted to individual needs. Designed to increase fitness. Half-course. *Riebel*

**16. Jogging.** Emphasis on individualized programs. Half-course. *Buehler*

**17. Water Polo.** Basic techniques including game tactics and strategy. Prerequisite: departmental swim test. Half-course. *Skinner*

**18. Synchronized Swimming.** Review of four basic strokes and synchronized variations. Beginning and intermediate sculls and figures combined into solo, duet, and group compositions. Half-course. *Ennis*

**20. Beginning Swimming.** Techniques for water safety: breathing control, floating, and elementary swimming. Half-course. *Spangler*

**21. Intermediate Swimming.** Stroke techniques and diving. Resuscitation. Prerequisite: Physical Education 20 or the equivalent. Half-course. *Spangler*

**22. Endurance Swimming.** Review of strokes and improvement through progressive practice. Half-course. *Spangler*

**23. Beginning Kayaking.** Development of all phases of single kayaking. Lake and river experience provided. Fee: \$45. Half-course. *Harvey*

**24. Advanced Lifesaving: New Materials of American Red Cross.** Red Cross Advanced Lifesaving Certificate issued upon satisfactory completion. Prerequisite: Physical Education 21 or equivalent. Half-course. *Woodyard*

**25. Water Safety Instructors Course: New Materials of American Red Cross.** Red Cross Water Safety Instructors Certificate upon satisfactory completion. Prerequisite: Physical Education 24 or equivalent. Half-course. *Woodyard*

**26. Advanced Swimming and Water Safety.** Swimming as an avocation or vocation. Prerequisite: advanced lifesaving or water safety instruction or equivalent. Half-course. *Persons*

**27. Scuba Diving.** An intermediate course. Prerequisite: consent of the instructor. Fee of \$10 covers use of specialized equipment. Half-course. *Skinner*

**28. Whitewater Canoeing.** Fee covers rental of equipment. Prerequisite: departmental swim test. Fee: \$45. Half-course. *Riebel*

- 29. Beginning Sailing.** On campus and Kerr Lake. Prerequisite: departmental swim test. Half-course. *Buehler*
- 30. Beginning Golf.** Fee of \$25. Half-course. *Myers*
- 31. Intermediate and Advanced Golf.** Wood shots, iron shots, approaching, and putting. Fee of \$25. Prerequisite: Physical Education 30 or equivalent instruction. Half-course. *Myers*
- 32. Handball, Racquetball, Squash.** No previous experience necessary. Half-course. *Skinner*
- 33. Fencing.** Basic skills emphasizing foil fencing. Half-course. *LeBar*
- 37. Racquetball-Badminton.** Basic instruction in racquetball and badminton. No previous experience necessary. Half-course. *Friedrich or Skinner*
- 38. Snow Skiing.** Basic instruction in techniques of snow skiing. Fee of \$80 covers rental of equipment, daily slope fees, housing for five nights, daily instruction on slopes, and ski lodge. Half-course. *Riebel or Harvey*
- 39. Bowling: Beginning and Advanced Techniques.** Fee. Half-course. *Eddy*
- 40. Beginning Tennis.** Half-course. *LeBar*
- 41. Intermediate Tennis.** Introduction to volley, lob, and smash. Competition in singles and doubles. Prerequisite: Physical Education 40 or equivalent. Half-course. *LeBar*
- 42. Advanced Tennis.** Review of strokes with emphasis on strategy and placement. Singles and doubles competition. Prerequisite: Physical Education 41 or equivalent. Half-course. *LeBar*
- 43. Power Volleyball.** Introduction to the basic skills. Half-course. *Howard*
- 45. Trampoline and Gymnastic Floor Exercise.** Beginning skills and techniques. Half-course. *Miller*
- 46. Beginning Gymnastics.** No previous experience necessary. Half-course. *Miller*
- 47. Intermediate Gymnastics.** Prerequisites: PE 45 or 46 or consent of instructor. Half-course. *Miller*
- 48. Self-Defense.** Course content varies: boxing, wrestling, judo, karate, or tae kwan-do. Half-course. *Falcone and staff*
- 50. Field Hockey.** Basic skills. Conditioning, rules, and analysis of strategy. Half-course. *Ennis*
- 51. Soccer, Lacrosse.** Fundamentals of individual skills and team play. Half-course. *Skinner*
- 52. Women's Lacrosse.** Basic skills. Half-course. *Staff*
- 53. Basketball.** Basic and advanced skills. Half-course. *Ennis*
- 92. Cardiopulmonary Resuscitation.** The techniques of artificial respiration and artificial circulation. Half-course. *Skinner*
- 93. Cardiopulmonary Resuscitation Instructors Course.** Prerequisite: Physical Education 92. Half-course. *Skinner*



## THEORY COURSES IN PHYSICAL EDUCATION AND RECREATION

**100. First Aid.** Knowledge and practical skills for dealing with emergency situations, personal safety, and accident prevention. Meets requirements of the American Red Cross for Standard First Aid and Personal Safety Certificate. One course. *Bookhout or Lloyd*

**102. Methods and Materials in Elementary Physical Education.** Theory and practice in teaching basic skills, rhythms, and games to young children in grades K-6. Half-course. *Spangler*

**105S. Group Leadership in Recreation.** Interaction and group dynamics. Open to sophomores, juniors, and seniors. One course. *Howard*

**106. Methods and Materials in Recreation.** Development of leadership skills in crafts, rhythmic activities, social recreation, and dramatics. Laboratory work includes experience with an organized recreational group. Open to sophomores, juniors, and seniors. One course. *Howard*

**113D. Anatomical Bases for Human Movement.** The function of bones, joints, and muscles in human movement. One course. *Harris*

**114. Kinesiology.** A study of muscle function and analysis of human movement. Prerequisite: Physical Education 113D or Zoology 108L. One course. *Harris*

**117. Adapted Physical Education.** Analysis of exercises and activities appropriate to individual needs. Theory and practice in planning and conducting adapted programs. Half-course. *Harris*

**146S. Women in Sports.** Emergence of women in sports. Changing social concepts affecting the status of the woman athlete and her participation in sports. One course. *Lloyd*

**163. Coaching Baseball and Track in Secondary Schools.** Theory and practice. Open to juniors and seniors. One course. *Buehler*

**164. Coaching Basketball and Football in the Secondary Schools.** Theory and practice techniques in football. Open to juniors and seniors. One course. *Falcone*

**166. Coaching Basketball in the Secondary Schools.** Theory and practice of coaching techniques in basketball. Open to juniors and seniors. One course. *Foster*

**170. History and Principles of Physical Education and Sports.** History of sports through the ages in terms of objectives, principles, and methods. Philosophy and principles of physical education and sports today in the light of the historical background. Analysis of changing patterns and trends. One course. *Friedrich*

**171. Recreation Administration and Leadership.** Basic concepts. Various recreational activities, games, and sports are discussed and demonstrated. Recreation programs are analyzed and interpreted in reference to community organizations, school, and family. One course. *Friedrich*

**172. The Administration of Physical Education and Athletics in the Secondary Schools.** Emphasis on leadership concepts is given through case studies, field trips, and appraisal of various types of programs. Open to juniors and seniors. One course. *Friedrich*

**173. Protective Practices in Physical Education.** Safety and protective measures, including training and rehabilitation. Open to juniors and seniors. One course. *Riebel*

**175. Psychology of Sport.** This course will deal with the psychological aspects of sports including: (1) personalities of athletes and coaches, (2) motivation, (3) self-image development (4) stress and anxiety, (5) aggression, (6) leadership, (7) group dynamics, (8) self-management. The course is designed for the student who wishes to learn the practical application of these psychological phenomena and how they relate to sport. One course. *Ennis*

**191. Independent Study.** Open to qualified juniors and seniors. One course. *Staff*

**192. Independent Study.** Open to qualified juniors and seniors. One course. *Friedrich*

**195S. Recent Research in Physical Education and Related Fields.** One course. *Staff*

## HEALTH EDUCATION

**134. Elementary School Health.** Organization of the health program; basic health problems; methods and materials for teaching children. Primarily designed for students preparing to teach in elementary schools. Juniors and seniors only. Half-course. *Staff*

**136S. Personal Health.** Fitness and fatigue. One course. *Friedrich*

**137S. Health in Developing Countries.** Health conditions, practices, and problems interacting with economics, productivity, and progress of emerging nations with some emphasis on African states. One course. *Staff*

**138S. Health Problems in Metropolitan Areas.** Relationships between urbanization and health illustrated by environmental hazards, population motion, food distribution, housing, city planning, poverty, drug usage, and consumer awareness. One course. *Staff*

**140S. Gereology and Health.** Health implications in relationships within families and between generations, in the changing role of the elderly in modern society, in retirement, and in extended leisure time; illness, disability, and medical care. One course. *Staff*

**170T. Special Health Problems.** Problems and issues in health affairs selected by students for concentrated study. One course. *Staff*

**174. School Health Problems.** A problem-solving approach to drugs, alcohol, sex education, tobacco, disease and accident prevention and control, nutrition, fitness, mental and emotional health, school health services, and environment. One course. *Friedrich*

**191, 192, 193, 194. Independent Study.** Prerequisite: consent of instructor. One course each. *Staff*

## DANCE

Technique and theory courses are offered for undergraduate men and women who have special interest in dance as an art form.

## Technique Courses

**60. Beginning Modern Dance I.** Modern dance as an art form: techniques, choreography, history, philosophy, and aesthetics. Half-course. *Wray*

**61. Beginning Modern Dance II.** Prerequisite: Physical Education 60. Half-course. *Wray*

**62. Intermediate Modern Dance I.** Movement and expression. Prerequisite: Physical Education 61. Half-course. *Wray*

**63. Intermediate Modern Dance II.** Prerequisite: Physical Education 62. Half-course. *Wray*

**64. Advanced Modern Dance.** Prerequisite: Physical Education 63. Half-course. *Wray*

**65. Beginning Improvisation.** Movement experimentation. Prerequisite: Physical Education 61. Half-course. *Wray*

**66. Modern Dance Repertory.** Choreography of the well-known artists. Prerequisite: Physical Education 64. Half-course. *Wray*

**67. Folk Dancing.** Dances of a particular country or area and study of related music, folklore, and costumes. Half-course. *Wray*

**68. Ballroom Dancing.** Waltz, foxtrot, jitterbug, tango, samba, cha-cha, and polka. Half-course. *Wray*

**69. Beginning Tap Dancing.** Basic step patterns and routines. Half-course. *Wray*

**70. Ballet.** Prerequisite: one year of training in the strict classical form. Half-course. *Dorrance*

**71. Intermediate Ballet.** Prerequisite: two years of ballet and consent of instructor. Half-course. *Dorrance*

**80. Individual Dance Program.** Varies with technique being taught, student's objectives, and student's ability. Prerequisite: consent of instructor. Half-course. *Wray*

## Theory Courses

The courses listed below are in the areas of dance history, composition, teaching, and nonverbal communication. Courses 130S, 131S, 133S meet distributional requirements in the social science division. Physical Education 113D and 114, listed under the Physical Education Theory Courses, are closely related to the study of dance.

**130S, 131S, 133S. History of Dance.** Emphasis on form, structure, and content related to culture of eras. Physical Education 130S, prehistoric to Duncan; Physical Education 131S, Duncan to Cunningham; Physical Education 133S, Cunningham to the present. Three courses. *Wray*

**132. Creative Movement for Children.** Basic theory and experience in creative movements for grades K-12. The study of the classification and elements of movement with observation and practical experience with children. Recommended for those students interested in dance, music, recreation, or elementary and secondary teaching. One course. *Wray*

**135, 136. Principles of Contemporary Dance Composition.** Prerequisite: Physical Education 60, 61, and 62, or consent of instructor. Two courses. *Wray*

**139. Movement Connotations.** Theories and forms of human movement with emphasis on sensory awareness and nonverbal communication. One course. *Wray*

**191, 192. Independent Study.** Open to qualified juniors and seniors. Two courses. *Wray*

## Hindi-Urdu

For courses in Hindi-Urdu, see *African and Asian Languages*

## History

Professor Durden, *Chairman*; Professor Davis, *Director of Undergraduate Studies*; Professors Colton, Ferguson, Hartwig, Holley, Hollyday, Lerner, Oates, Preston, Ropp, A. Scott, W. Scott, TePaske, Watson, and Young; Associate Professors Bergquist, Cahow, Cell, Chafe, Crellin, Dirlik, Gavins, Gifford, Goodwyn, Maier, Mauskopf, Miller, Nathans, Richards, Witt, and Wood; Assistant Professors Decker, di Corcia, Huber, Kuniholm, and J. Scott; Visiting Assistant Professor Reddy; Lecturer Bronfenbrenner; Instructor Kunst

History courses offer students from all disciplines within the University an opportunity to investigate the past, gain perspective on the present, and improve their critical faculties. History provides an integrating principle for the entire learning process. Students of history gain a sense of human development, an understanding of fundamental and lasting social processes, and a feeling for man's interrelatedness. History courses train the mind by improving skills in communicating thought and imagination.

### PREREQUISITE COURSES

Majors take a year sequence of two prerequisite courses in history (21-22, 21S-22S, 53-54, 91-92, 175D-176D), beginning either semester. Other students are urged, but not required, to take two semesters of prerequisite courses before proceeding to advanced-level courses. Additional courses may be chosen from this group as electives or part of the departmental major.

**21. Europe to the Eighteenth Century.** Development and world impact of European civilization; critical evaluation of historical interpretations; investigation of history from primary sources. One course. *Staff*

**21S. Europe to the Eighteenth Century.** A seminar version of History 21. One course. *Staff*

**22. Europe from the Eighteenth Century.** Development and world impact of European civilization; critical evaluation of historical interpretations; investigation of history from primary sources. One course. *Staff*

**22S. Europe from the Eighteenth Century.** A seminar version of History 22. One course. *Staff*

**53. Greek History.** (Also listed as Classical Studies 53.) One course. *Raschke*

**54. Roman History.** (Also listed as Classical Studies 54.) One course. *Raschke*

**91. The Development of American Democracy to 1865.** A study of the trends vital to an understanding of the United States today. The main theme is the development of American democracy. Problems of foreign policy, the growth of



capitalism, political practices, social reform, and conflicting ideals are considered in relation to this main theme. One course. *Staff*

**91S. The Development of American Democracy to 1865.** Seminar version of History 91. One course. *Staff*

**92. The Development of American Democracy, 1865 to the Present.** A continuation of History 91 with emphasis upon the emergence of contemporary problems in the United States. One course. *Staff*

**92S. The Development of American Democracy, 1865 to the Present.** Seminar version of History 92. One course. *Staff*

**175D, 176D. The Internationalization of the World: Themes in Third World-Western Interaction.** Two courses. *Staff*

## UNDERGRADUATE COLLOQUIA

Colloquia are open without prerequisite to all undergraduates and are designed for the nonspecialist, although history majors may take them for credit. Each colloquium consists of reading and discussion involving an explicit historical theme. Short papers, reports, and a final examination may be required.

Unlike seminars, which emphasize materials and methods of historical research, colloquia concentrate on historical literature.

**101A. Modern Japan in the Novel.** Literature in translation as a resource for the investigation of topics including Western influence, changing Japanese attitudes toward the West and toward their own culture, and Japanese perception of social change. One course. *Huber*

**101C. Representative Europeans.** Autobiographical and biographical approaches to major intellectual, political, and aesthetic trends in modern Europe. One course. *Hollyday*

**101E. Changing Western Views of Civilization.** Different perspectives from which the West has seen the outside world and itself from the sixteenth century to the present; the European idea of civilization, images of the New World, Social Darwinism, Marxism, cultural relativism, modernization, and dependency theories. One course. *Huber*

**101F. Ideology and Society: Marxist Party Formation in China and Russia.** An introduction to Marx's theory of revolution followed by a comparative analysis of the development of Marxism in China and Russia, and the processes by which each created revolutionary societies. One course. *Dirlik and Miller*

**101G, 102G. Introduction to Islamic Civilization.** (Also listed as Interdisciplinary Course 162, 163.) Two courses. *Braibanti, Lawrence, and staff*

**101H. Science in the Twentieth Century.** One course. *Mauskopf*

## OTHER UNDERGRADUATE COURSES

**95. The Roman Revolution.** (Also listed as Classical Studies 137.) *Staff*

**96. Early Greece and the Near East.** (Also listed as Classical Studies 133.) *Staff*

**103. The Economic, Social, and Political Institutions of Europe, 1250-1600.** (Also listed under Medieval and Renaissance Studies.) One course. *Witt*

**104. The Intellectual Life of Europe, 1250-1600.** (Also listed under Medieval and Renaissance Studies.) One course. *Witt*

**105, 106. Political and Constitutional History of England.** The origins and evolution of the principal institutions of the English government, related to their setting in a changing society. (105, also listed under Medieval and Renaissance Studies.) Two courses. *J. Scott*

**107, 108. Social and Cultural History of England.** English history from the fourteenth century to the present time in an effort to arrive at a synthesis of ideas, social conditions, and political events and thus provide a background for the study of English literature. (107, also listed under Medieval and Renaissance Studies.) Two courses. *Ferguson*

**111. Early America to 1760.** One course. *Wood*

**112. Era of the American Revolution, 1760-1815.** One course. *Wood*

**113, 114. The United States from the 1890s to World War II.** First semester to 1920. Second semester through the New Deal. Two courses. *Watson*

**115, 116. History of Africa.** Social, political, and economic development in tropical Africa. First semester: cultural background and precolonial history. Second semester: colonial and contemporary times. Two courses. *Hartwig*

**117, 118. European Imperialism and Colonialism.** Structure and ideology of Western imperialism from the Age of Expansion through the Vietnam War and its impact upon Western societies. Two courses. *Cell*

**119, 120. History of Socialism and Communism.** The origins and development of socialist and communist movements from pre-Marxian times to the present. Two courses. *Lerner*

**121, 122. Diplomatic History of the United States.** Emphasis on those factors, foreign and domestic, that have shaped the foreign policies of the Republic. Two courses. *Davis*

**123, 124. City and Frontier in United States History.** The westward movement and the progress of urbanization with attention to the social and political consequences. Two courses. *Decker or A. Scott*

**125. The Athenian Empire.** (Also listed as Classical Studies 134.) One course. *Staff*

**126. Alexander the Great.** (Also listed as Classical Studies 135.) One course. *Staff*

**127. History and the Visual Image.** One course. *Wood*

**128. The United States and Latin America.** Economic, cultural, political, and diplomatic relationships in the twentieth century. One course. *Bergquist*

**129, 130. Society and Government in the United States 1789-1877.** Two courses. *Nathans*

**131. Mexico and the Caribbean from the Wars of Independence to the Present.** One course. *TePaske*

**132. Major South American Nations, 1850 to the Present.** Comparative development of export economies of Brazil, Argentina, Colombia, Chile, and Venezuela and impact on social structure, politics, and culture. One course. *Bergquist*

**133. Medieval Europe, 300-1000 A.D.** (Also listed under Medieval and Renaissance Studies.) One course. *Young*

**134. Medieval Europe, 1000-1400 A.D.** (Also listed under Medieval and Renaissance Studies.) One course. *Young*

**135. Political, Economic, and Social History of Europe, 1890-1933.** The challenge of social democracy, nationalism, and the rise of fascism; World War I and the Great Depression. One course. *Maier*

**136. Europe Since 1933.** Nazi Germany and Hitler's Europe, popular fronts and resistance movements, left-wing culture since the Spanish Civil War, the role of the United States and of decolonization on postwar stability. One course. *Maier*

**137, 138. Foreign Relations of the European Powers.** European diplomacy and Europe's position in the world since 1870, with an introductory survey of diplomatic institutions since the Renaissance. Two courses. *W. Scott*

**139. Europe in the Age of National Unification.** Clash of nationalities; conflict between monarchic conservatism and liberalism; romanticism and realism in literature and art; emphasis on Central Europe from Metternich to 1871. One course. *Hollyday*

**140. Europe in the Era of German Ascendancy.** International tensions, industrialization, socialism, state intervention, Darwinism, expressionism in art and literature, crises in Imperial Germany and Austria-Hungary from Bismarck to the collapse in 1918. One course. *Hollyday*

**141. Man and Society in Traditional China.** Chinese thought and institutions from earliest times to the nineteenth century. One course. *Dirlik*

**142. The Roots of the Revolution.** Nineteenth- and twentieth-century China. One course. *Dirlik*

**143, 144. History of Modern Japan.** Japan from 1600 to the present; the transition from the traditional to the modern state. Two courses. *Huber*

**145, 146. Afro-American History.** The Black experience in America from slavery to the present. (Also listed as Afro-American Studies 145, 146.) Two courses. *Gavins*

**147. History of India to 1707.** Early development, classical Hindu civilization, the impact of Islam, first modern contacts. One course. *Richards*

**148. History of India and Pakistan, 1707 to the Present.** Decay of the Mughal Empire, social and economic impact of Western rule, development of nationalism and independence. One course. *Richards*

**149. Military History.** War, politics, and technology. One course. *Ropp*

**150S. The Concept of the Democratic Faith.** One course. *Cahow*

**151. Modern Technology.** Emphasis on Western technology in the nineteenth and twentieth centuries as related to political, economic, and scientific trends. One course. *Ropp*

**153S. The Insurgent South.** (Also listed as Interdisciplinary Course 153S.) Not open to students who have taken History 199 or Interdisciplinary Course 199. One course. *Goodwyn*

**154. Medieval England.** (Also listed under Medieval and Renaissance Studies.) One course. *Young*

**155, 156. Modern Latin America.** First semester: nineteenth century. Second semester: twentieth century. Two courses. *Bergquist*

**157, 158. The Rise of Modern Science.** The development of science and medicine, with attention to cultural and social influences upon science. First semester: through Newton. Second semester: eighteenth to twentieth centuries. Two courses. *Mauskopf*

**159S. The Palestine Problem and United States Public Policy.** (Also listed as Public Policy Studies 175S.) One course. *Kuniholm*

**160. The United States from the New Deal to the Present.** One course. *Chafe*

**161, 162. History of Modern Russia.** First semester: origins of Kievan Russia in the ninth century through the reign of Catherine the Great (1762-1796), concentrating on the formation of the imperial state, class elites, and psychological interpretations of the rulers. Second semester: nineteenth and early twentieth century to the death of Lenin, stressing the opposition movements in society. Two courses. *Lerner or Miller*

**163. The Old South, 1820-1861.** One course. *Durden*

**164. The Origins of the New South, 1861-1900.** One course. *Durden*

**167, 168. Modern European Intellectual and Cultural History.** Leading European thinkers from the Enlightenment to the present. Two courses. *Staff*

**169, 170. The Search for the American Woman: A New Approach to Social History.** Prerequisite: History 91, 92. Two courses. *A. Scott*

**171. France in the Nineteenth Century.** Emphasis on social and cultural developments. One course. *Reddy*

**173, 174. History of Spain and the Spanish Empire from Late Medieval Times to the Present.** First semester: unification and development of the empire in Europe and America, emphasizing colonial institutions and culture, 1450-1670. (Also listed under Medieval and Renaissance Studies.) Second semester: fall of the empire and modern development through the Franco Regime. Two courses. *TePaske*

**175D, 176D. The Third World and the West.** Economic, social, political, and cultural relationships, 1500 to the present. Two courses. *Staff*

**177. China since 1949: The Peoples' Republic.** The Chinese path to communism and the communist transformation of Chinese society. One course. *Dirlik*

**178. Diplomacy of the United States Since 1939.** One course. *Davis or Kuniholm*

**179, 180. Bourbon, Revolutionary, and Napoleonic France.** Development of the Bourbon monarchy and social self-conceptions; causes, patterns, and meanings of the Revolution; Napoleon's relation to Bourbon and Republican France and to Europe. Two courses. *di Corcia*

**181, 182. The Development of Modern Medicine.** First semester: to 1800 with concentration on seventeenth and eighteenth centuries. Second semester: nineteenth and twentieth centuries. Two courses. *Gifford and Crellin*

**183S. Canada from the French Settlement.** Problems in the development of Canada and its provinces. One course. *Preston*

**184. Canada: Problems and Issues of an Advanced Industrial Society.** (Also listed as Interdisciplinary Course 184.) One course. *Preston and visiting lecturers*



**185, 186. Revolution in the Modern World.** Survey of theories of revolution (Marxist, sociological, and historical), followed by a comparative study of the Great Revolutions (English, American, French, Russian) and of the revolution and resistance to Colonialism in the Third World (including Cuba, Africa, India, China, and Vietnam). Two courses. *Cell*

**187. Canada and the United States: Their Diplomatic Relations.** One course. *Davis*

**193, 194. Introduction to the Civilizations of Southern Asia.** (Also listed as Interdisciplinary Course 101, 102.) Two courses. *Staff*

### **For Seniors and Graduates**

Students may receive credit for either semester of a hyphenated course at the 200-level without taking the other semester if they obtain written consent from the instructor.

**201S, 202S. Aspects of Change in Prerevolutionary Russia.** Origin and dynamics of the Russian revolutionary movement, the intelligentsia, and the emergence of the labor movement. Two courses. *Miller*

**203. The Uses of History in Public Policy I.** (Also listed as Public Policy Studies 271.) One course. *Goodwyn*

**204. The Uses of History in Public Policy II.** (Also listed as Public Policy Studies 273S.) One course. *Kuniholm*

**205S. The Progressive Era in the United States and World War I.** One course. *Watson*

**206S. The Nineteen-Twenties and the New Deal in the United States.** One course. *Watson*

**207S, 208S. The Development of Urban America.** The process of urbanization from rural society to the modern city. Two courses. *Decker or A. Scott*

**209S, 210S. Selected Topics in Afro-American History, 1619-Present.** Critical view of the collective experience of Afro-Americans with special attention to Black institutional development. (Also listed as Afro-American Studies 209S, 210S.) Two courses. *Gavins*

**212. Recent Interpretations of United States History.** A course designed to encourage a critical evaluation of major issues in United States history through examination of recent interpretations of key problems. (Open only to history graduate students and seniors doing practice teaching in one of their final two semesters.) One course. *Watson and staff*

**213. Medicine and Society in America.** Emergence of modern medical science, patterns and options for medical care, and health-related ethical issues considered in historical and contemporary American background. One course. *Gifford*

**215-216. The Diplomatic History of the United States.** (Not open to undergraduates who have had History 121-122.) Two courses. *Davis*

**217S. Fascism and Its Background.** Italy and Germany, with attention also to France and Eastern Europe. One course. *Maier*

**218S. Twentieth-Century Europe.** Social and economic issues: inflation, mass unemployment, and the international economy. One course. *Maier*

**219. Culture and Society in German Speaking Europe, 1870–1930.** Relationship of German and Austrian literature, opera, and social thought to the political and economic transformations of the era. One course. *Maier*

**221. Problems in the Economic and Social History of Europe, 1200–1700.** (Also listed under Medieval and Renaissance Studies.) One course. *Witt*

**222. Problems in European Intellectual History, 1250–1550.** (Also listed under Medieval and Renaissance Studies.) One course. *Witt*

**223S, 224S. The Old Regime, the Enlightenment, and the French Revolution.** Political, social, and intellectual trends in seventeenth- and eighteenth-century Europe, with emphasis on France and the French Revolution. Two courses. *Staff*

**227–228. Recent United States History: Major Political and Social Movements.** Two courses. *Chafe*

**229. Recent Interpretations of Modern European History.** A course designed to develop the ability to appraise critical historical issues through the study and discussion of recent interpretations of key historical problems in modern European history. (Open only to history graduate students and seniors doing practice teaching in one of their final two semesters.) One course. *Staff*

**230. Recent Interpretations of Asian History.** Critical study of historical literature pertaining to China, Japan, and India. One course. *Richards*

**231S, 232S. Problems in the History of Spain and the Spanish Empire.** Two courses. *TePaske*

**234S. Political Economy of Development: Theories of Change in the Third World.** (Also listed as Anthropology 234S, or Political Science 234S and Sociology 234S.) One course. *Bergquist, Pesser, Portes, Smith, and Valenzuela*

**237S. Europe in the Early Middle Ages.** (Also listed under Medieval and Renaissance Studies.) One course. *Young*

**238S. Europe in the High Middle Ages.** (Also listed under Medieval and Renaissance Studies.) One course. *Young*

**239. History of Socialism and Communism.** Origins and development of socialist and communist movements. One course. *Lerner*

**240. Aspects of Traditional and Modern African Culture.** Introduction to the oral and written literatures and musical and artistic traditions. One course. *Hartwig*

**241–242. Modernization and Revolution in China.** Two courses. *Dirlik*

**247. History of Modern India and Pakistan, 1707–1857.** Analysis and interpretation, with special emphasis on social and economic change. One course. *Richards*

**248. History of Modern India and Pakistan, 1857 to the Present.** One course. *Richards*

**249–250. Social and Intellectual History of the United States.** The interplay of ideas and social practice through the examination of attitudes and institutions in such fields as science and technology, law, learning, and religion. Two courses. *Holley*

**253S, 254S. Europe Between the Wars.** First Semester: 1914–1933. Second Semester: 1933–1945. Two courses. *W. Scott*

- 255S-256S. **Problems in African History.** Two courses. *Hartwig*
260. **Economic History of Japan.** (Also listed as Economics 232.) One course. *Bronfenbrenner*
- 261-262. **Problems in Soviet History.** Studies in the background of the Revolution of 1917 and the history and politics of the Soviet state. Two courses. *Lerner*
- 263-264. **American Colonial History and the Revolution, 1607-1789.** The founding and institutional development of the English colonies; the background, progress, and results of the Revolution. Two courses. *Wood*
- 265S, 266S. **Problems in Modern Latin American History.** Two courses. *Bergquist*
- 267S-268S. **From Medieval to Early Modern England.** The intellectual, social, and political problems of transition to modern England, with special emphasis on the English Renaissance. (Also listed under Medieval and Renaissance Studies.) Two courses. *Ferguson*
- 269-270. **British History, Seventeenth Century to the Present.** Historiography of social structure and social change: English Revolution, party, the Industrial Revolution, class and class consciousness, Victorianism, and the impact of war in the twentieth century. Two courses. *Cell*
272. **Poverty in the United States: An Historical Perspective.** (Also listed as Public Policy Studies 272). One course. *Decker*
- 273, 274. **Topics in the History of Science.** Critical stages in the evolution of scientific thought. Two courses. *Mauskopf*
- 275S, 276S. **Central Europe, 1848-1918.** Conflict between liberalism and authoritarianism, clash of nationalities, diplomatic interaction, emphasizing domestic changes in Germany and Austria-Hungary. Two courses. *Hollyday*
- 277S. **The Coming of the Civil War in the United States, 1820-1861.** One course. *Durden*
- 278S. **The Civil War in the United States and its Aftermath, 1861-1900.** One course. *Durden*
280. **Historiography.** Great historians since Herodotus and an examination of recent twentieth-century trends. One course. *Hollyday*
- 282S. **Seminar on Canada.** See course description for Interdisciplinary Course 282S. (Also listed as Anthropology 282S, Economics 282S, Political Science 282S, Sociology 282S, and under Canadian Studies.) One course. *Staff and visitors*
283. **Political and Social Change in the United States, 1789-1860.** One course. *Nathans*
- 285S, 286S. **Oral History.** Research on race relations and civil rights in the United States in the twentieth century using techniques of oral history. Prerequisite: consent of instructor. Two courses. *Chafe and Goodwyn*
- 287-288. **History of Modern Japan.** The political, economic, and social development of Japan since 1750; factors contributing to Japan's emergence as a modern state. Two courses. *Staff*
- 297S. **The British Empire of the Nineteenth Century.** The development of the Empire from the American Revolution to the imperialism that culminated in the South African War. One course. *Preston*

**298S. The Commonwealth in the Twentieth Century.** The origins and evolution of the Commonwealth of Nations and its adjustment in the age of anticolonialism. One course. *Preston*

## **SMALL-GROUP LEARNING EXPERIENCES**

(For discussion sections, see History 175D, 176D.)

### **Tutorial**

**189T, 190T. Tutorial in History.** Two courses. *Staff*

### **Independent Study**

Independent study is usually undertaken by students concurrently with a course or with an instructor with whom they have had a course. Students should submit to the instructor in writing a detailed description of intent in the study. Both the instructor's consent and approval of the Director of Undergraduate Studies are required for enrollment.

**191, 192. Independent Study.** One or two courses each. *Staff*

### **Undergraduate Seminars**

(See also History 21S, 22S, 91S, 92S, 150S, 153S, 159S, 183S.)

**165S-166S. Seminar in Selected Topics.** Course content determined by instructor: consent of instructor is required. Two courses. *Staff*

The following seminars offer opportunities for reading and historical investigation in significant problems. Juniors as well as seniors may apply for admission to these courses and are urged to do so if they expect to be candidates for graduation with distinction in history or if they expect to practice-teach in their senior year. All seminars are open to majors and nonmajors.

**195A-196A. Renaissance Intellectual History.** Studies in the transformation of European thought between 1300 and 1600. (Also listed under Medieval and Renaissance Studies.) Two courses. *Witt*

**195B-196B. Twentieth-Century Europe.** Two courses. *Maier*

**195C-196C. Problems in the Social and Intellectual History of the United States.** Two courses. *Holley*

**195D-196D. History of Medicine: Health and Disease in the Nineteenth and Twentieth Centuries.** Two courses. *Crellin, Gifford, or English*

**195E-196E. The Age of the American Revolution.** Two courses. *Wood*

**195F. The Coming of the Civil War in the United States, 1820-1861.** One course. *Durden*

**196F. The Civil War in the United States and Its Aftermath, 1861-1900.** One course. *Durden*

**195G-196G. Nationalism and Communism in the Far East.** Two courses. *Dirlik*

**195H-196H. From Rural to Urban Society in the United States.** (History 195H is also listed as Public Policy Studies 195A.) Two courses. *Decker or A. Scott*

**195I. The Emergence of Germany, 1815-1871.** One course. *Hollyday*

**196I. The German Empire and Europe, 1871-1918.** One course. *Hollyday*



**195J-196J. History of International Socialism to the First World War.** Evolution of socialist thought from early nineteenth-century Utopian theory through Marxist and anarchist ideologies; the relationship of socialist parties and leaders to the First and Second Internationals. Two courses. *Miller*

**195K-196K. Social Change in Modern Britain.** Two courses. *Cell*

**195L. Causes of Revolution: Search for a Model.** One course. *Cell*

**195M-196M. Europe and the World Since 1914.** Two courses. *W. Scott*

**195N-196N. The English Renaissance.** (Also listed under Medieval and Renaissance Studies.) Two courses. *Ferguson*

**195P-196P. England in the Ages of the Puritan and American Revolutions.** Two courses. *J. Scott*

**195Q-196Q. The Industrial Revolution in Western Europe, 1780-1914.** Two courses. *Reddy*

**195R. The Age of Newton.** One course. *Mauskopf*

**196R. Science and Society, 1775-1875.** One course. *Mauskopf*

**195S-196S. Processes of Development in Modern Japan, 1800 to the Present.** Two courses. *Huber*

**195T-196T. Problems in the History of Russia Before 1917.** Two courses. *Lerner or Miller*

**195U-196U. Social Conflict and Political Change in the United States, 1789-1860.** Two courses. *Nathans*

**195W-196W. Problems in Indian History.** Two courses. *Richards*

**195X-196X. Problems in Latin American History.** Two courses. *Bergquist or TePaske*

**195Y-196Y. Issues in the History of Tropical Africa.** Two courses. *Hartwig*

**195Z-196Z. Problems in Recent United States Diplomatic History.** Two courses. *Davis*

**197S-198S. Senior Honors Seminar.** A course designed to introduce qualified students to advanced methods of historical research and writing and to the appraisal of critical historical issues. Open only to seniors, but not restricted to candidates for graduation with distinction. This course, when taken by a history major, is accompanied by two courses of 195-196 seminars or at the 200-level. In unusual circumstances, with consent of the instructor, coordinator of the senior honors seminar, and Director of Undergraduate Studies, 191-192 may replace the two courses of 195-196 seminars or at the 200-level. Two courses. *Staff*

### Upperclassmen-Graduate Seminars

See History 201S, 202S, 205S, 206S, 207S, 208S, 209S, 210S, 217S, 218S, 223S, 224S, 231S, 232S, 234S, 237S, 238S, 253S, 254S, 255S-256S, 265S, 266S, 267S-268S, 275S, 276S, 277S, 278S, 282S, 285S, 286S, 297S, and 298S.

### DEPARTMENTAL MAJOR

*Prerequisite.* A year sequence of two prerequisite courses in history (21-22, 21S-22S, 53-54, 91-92, 175D-176D), beginning either semester.

*Major Requirements.* Students desiring to major in history elect, in addition to the two prerequisite courses, six courses in the department, including two courses in

an undergraduate seminar (195-196, 197S-198S) or on the 200-level. They are urged to register for two consecutive courses at this level, but may take two single-semester courses with consent of both instructors. Students wishing to take advanced courses in the history of the United States are advised to elect History 91-92.

**Foreign Languages.** Majors interested in a particular area of study would benefit from knowledge of the language of that area. Majors who contemplate graduate work are reminded of the requirement of a reading knowledge of one or two foreign languages.

**Majors Planning to Teach.** Majors who plan to teach in secondary schools should consult the education department. Rising juniors who intend to practice teach in the senior year should take their 195-196 or 197S-198S seminar or 200-level courses as juniors. History 212 is scheduled in the spring in accelerated sessions to accommodate students who are on campus for half of the semester during the semester they do practice teaching.

**Ancient History.** For additional courses in ancient history which may be taken for credit in history, see the history courses listed in the Department of Classical Studies.

**Honors.** Any student who is qualified (see the section on honors in this bulletin) may apply to the Director of Undergraduate Studies for permission to undertake work leading to a degree with distinction in history.

## House Courses

See the chapter, Academic Procedures and Information, for information on house courses.

## Interdisciplinary Courses

**101, 102. Introduction to the Civilizations of Southern Asia.** Hindu, Islamic, and Buddhist foundations, impact of the West, and emergence of the modern nation-states of Southern Asia. First semester: traditional Hindu civilization and Islamic impact on Southern Asia. Second semester: Western influences and the development of modern societies and states in Southern Asia. (Also listed as Anthropology 101, 102; History 193, 194; Political Science 101, 102; and Religion 160, 161.) Two courses. *Lawrence and staff*

**104. Homo Sapiens and the Marine Environment.** For description see Marine Sciences. One course. *Staff*

**120. Perspectives on Food and Hunger.** Issues of world food and hunger from an interdisciplinary perspective. Weekly lectures present analytic approaches from the natural sciences, social sciences, and the humanities. Half-course. *Graedon and Johns*

**120A. Perspectives on Food and Hunger.** See Interdisciplinary Course 120. Weekly lectures, weekly discussion meetings, and individual projects. One course. *Graedon and Johns*

**153S. The Insurgent South.** Reconstruction, Populism, and the civil rights era, each approached from a multidisciplinary perspective. Not open to students who have taken Interdisciplinary Course 199 or History 199. Prerequisite: consent of instructor. (Also listed as History 153S.) One course. *Goodwyn*

**156. The Changing Roles of Men and Women: Two-Career Families.** Interrelations of occupational activity, conjugal relationships, household division of labor and child care. Emphasis on the interplay of structural and psychological factors and on public policy implications. (Also listed as Sociology 156 and Political Science 156.) One course. *McGee and J. O'Barr*

**158. Women and Literature.** Modern women authors including Virginia Woolf, Doris Lessing, and Anais Nin; myths of women in literature and society. Nature of course adapted to the interests of students. This course may be used for distributional requirements in humanities. Prerequisite: consent of instructor. One course. *Staff*

**162, 163. Introduction to Islamic Civilization.** Extensive survey of Muslim peoples and institutions. First semester: the Middle Eastern origins and cultural attainments of medieval Islam. Second semester: modern developments and global features of the Islamic world. (Also listed as Anthropology 147-148, History 101G, 102G, Political Science 115, 116, and Religion 162, 163.) Two courses. *Braibanti, Lawrence, and staff*

**184. Canada: Problems and Issues of an Advanced Industrial Society.** Federal-provincial relations, economic development, environmental and resource problems, American economic and cultural influences, bilingualism and biculturalism, international relations and aid, defense, military relations with the United States, and the "quest for identity." Some seminars conducted by visiting Canadian specialists. (Also listed as History 184, Economics 184, Political Science 184, and Sociology 184.) One course. *Preston and visiting lecturers*

**257S, 258S. Modern East Asia: Introduction to Problems and Literature.** Response of the monarchy to the Western challenge; the Western impact and strains in Chinese society; the disintegrative role of the military in modern China; bureaucracy in modern Japan; the role of women in Japanese society; the potential political impact of the Japanese environmental movement; the Korean student revolution; and response to Western pressure. (Also listed as Political Science 257S, 258S.) Two courses. *McKean*

**282S. Seminar on Canada.** Each semester a different theme will be studied, e.g., nationalism in Canada, resources and environment, Canadian defense policies, Canadian-American relations, minorities in Canada. (Also listed as Anthropology 282S, Economics 282S, History 282S, Political Science 282S, and under Canadian Studies.) One course. *Staff and visitors*

## Italian

For courses in Italian, see *Romance Languages*.

## Japanese

For courses in Japanese, see *African and Asian Languages*.

## Judaic Studies—Cooperative Program at Duke and UNC-Chapel Hill

Associate Professor E. Meyers (religion), *Director*; Professor Wintermute (religion); Associate Professors Bland (religion) and Bailey (divinity); Assistant Professors Alt (Germanic languages and literature) and Halperin (religion)

A program in Judaic studies may be taken as part of a major in religion, as a supplement to any other major, or under Program II.

For a description of the following courses consult the listings under the specified departments.

### German

- 171. Yiddish Literature in Translation. *Alt*
- 181–182. Elementary Yiddish. *Alt*

### Religion

- 50. The Old Testament. *Staff*
- 51. Introduction to Judaic Civilization. *Bland or E. Meyers*
- 104. The Prophets of the Old Testament. *Wintermute*
- 105. Theology of the Old Testament. *Wintermute*
- 109. Women in the Biblical Tradition: Image and Role. One course. *C. Meyers*
- 110. Archaeology and Art of the Biblical World. One course. *C. Meyers or E. Meyers*
- 115–116. Introduction to Biblical Hebrew. *Bailey*
- 131D. Principles of Archaeological Investigation. *C. Meyers or E. Meyers*
- 132D. Palestine in Late Antiquity. *E. Meyers*
- 133. Foundations of Post-Biblical Judaism. *E. Meyers*
- 134. Jewish Mysticism. *Bland*
- 135. Jewish Religious Thought. *Bland*
- 136. Contemporary Jewish Thought. *Bland or E. Meyers*
- 137. Jewish Ritual and Theology. *Bland*
- 139. Modern Hebrew. *Raynor*
- 195C, 196C. Junior-Senior Seminars: Judaic Studies. *Staff*
- 207, 208. (Divinity School) Intermediate Biblical Hebrew. *Wintermute and E. Meyers*
- 220. Rabbinic Hebrew. *E. Meyers or Davies*
- 221. Readings in Hebrew Biblical Commentaries. *Bland*
- 238. Jewish Responses to Christianity. *Bland*
- 244. The Archaeology of Palestine in Hellenistic-Roman Times. *E. Meyers*

Opportunities for independent study are offered in the Department of Religion under 191, 192, 193, 194. Procedures for registration and applications are available in 118 Gray Building.

Special attention is directed to those courses in New Testament which are relevant to the study of Rabbinic Judaism, i.e., Religion 106, 107, 108, 111, and 145 and to the appropriate courses at the University of North Carolina at Chapel Hill.

## Latin

For courses offered in Latin, see *Classical Studies*.

## Linguistics

Students interested in the study of language as part of their undergraduate program or as preparation for graduate work in linguistics should consult the instructors of the courses listed below. No major is offered in linguistics. The courses may be taken as electives by advanced students, and certain courses serve as related work in several major programs. For descriptions of the following courses see the listings of the specified departments:

### Anthropology

- 107. Introduction to Linguistics. (Also listed as English 107.) *Apte, Butters, or Hull*
- 116. Language, Ethnicity, and New Nations. *Apte*
- 117. Language, Law, and Politics. *O'Barr*
- 119. Language, Culture, and Society. *Apte or Rosen*
- 211. Linguistic Anthropology: Ethnography of Communication. *Apte*



## English

- 107. Introduction to Linguistics. (Also listed as Anthropology 107.) *Staff*
- 108. English Historical Linguistics. *Butters or Nygard*
- 109. Modern English Grammar. *Butters*
- 207. Old English Grammar and Readings. *Nygard or Reiss*
- 208. History of the English Language. *Nygard or Reiss*
- 209. Present-Day English. *Butters, Nygard, or Reiss*

## French

- 125. French in the New World. *Hull*
- 210. The Structure of French. *Hull*
- 219. Old French Literature. *Vincent*
- 224. History of the French Language. *Hull*

## German

- 205, 206. Middle High German. *Rosenberg*
- 216. History of the German Language. *Rosenberg*
- 219. Applied Linguistics. *Rosenberg*

## Philosophy

- 103. Symbolic Logic. *Ross*
- 109. Philosophy of Language. *Fjeld or Welsh*

## Psychology

- 134. Psychology of Language. *Day*

## Spanish

- 257. History of the Spanish Language. *Garci-Gómez*

## Yiddish

- 181, 182. Elementary Yiddish. *Alt*

# Management Sciences

Professor Keller, *Chairman*; Professor Dickens, *Director of Undergraduate Studies*; Professors Baligh, Cohen, Forsyth, Hamner, Laughhunn, Lewin, Morey, and Peterson; Associate Professors Baker, Battle, Burton, Dellinger, Dittman, Huber, Hughes, Lewicki, Maier, McCann, Owen, Payne, Vander Weide; Assistant Professors Collier, Eaker, Espejo, Kessler, Magat, Mericle, Monroe, and Taylor

The courses offered by the Department of Management Sciences stress conceptual understanding of, and analytical reasoning related to, problems of modern management, and the relationship between the performance of complex organizations and the society in which they operate.

**50. Elementary Theory of Economic Enterprise.** Analysis of the internal resource allocation of the firm, market structures, and capital theory and the mathematical foundations for this analysis. Prerequisites: Mathematics 31, 36, or equivalent. Not open to students who have taken Economics 2 or 52. One course.

**50P. Preceptorial.** Elective preceptorial for students enrolled in Management Sciences 50.

**53. Introductory Financial Accounting.** The accounting model of the firm and transactions analysis. Topics include the procedures used to process accounting data, issues in asset valuation and income determination, and financial statement analyses. Prerequisite: Mathematics 31. Corequisite: Management Sciences 50 or equivalent. One course.

**53P. Preceptorial.** Elective preceptorial for students enrolled in Management Science 53.

**110. Probability and Statistics.** Probability theory and distributions. Classical statistical analysis and its application to decision problems. Estimation, hypothesis testing, regression, and correlation analysis. Not open to students who have taken Public Policy Studies 112, Economics 138, Mathematics 53, or Engineering 150. Prerequisites: Mathematics 31, 36, or equivalent. Corequisite: Management Science 50. One course.

**114. Decision Models.** Mathematical models in the analysis of decision problems. Topics include linear algebra, linear programming, and decision analysis; approaches to the solution of complex problems. Prerequisites: Computer Science 51, Management Sciences 50, and 110, and Mathematics 31, 36, or equivalent. One course.

**116. Stochastic Operations Research Models.** Topics include inventory theory, queuing theory, stochastic processes, Markov chains, reliability, advanced decision analysis, and simulation. Prerequisite: Management Sciences 114 or consent of instructor. One course.

**117. Deterministic Operations Research Models.** Topics include decomposition, nonlinear programming, integer programming networks, dynamic programming, game theory. Prerequisite: Management Sciences 114 or consent of instructor. One course.

**120. Analysis of Organizational Behavior.** The structure and behavior of organizations, with special reference to business firms. Topics include rationality, authority, bureaucracy; power, decision making, informal organization, organization change; effects of technology, culture, and other environmental influences. Prerequisite: Management Sciences 50. One course.

**120P. Preceptorial.** Elective preceptorial for students enrolled in Management Sciences 120.

**121. Leadership and Small Groups.** Normative studies of work group formation, maturation, and sanctions. Experiential exercises in leadership and group processes. Prerequisites: Management Sciences 50, 110, and 120 or equivalent. Not open to students who have taken Psychology 147S. One course.

**137. Managerial Accounting.** The use of accounting information by management in short-term planning, control, and decision making in business enterprises. Cost accumulation, cost analysis, cost estimation, the development of standards, introduction to budgeting, and short run decisions. Prerequisite: Management Sciences 53. Corequisite: Management Sciences 114. One course.

**141. Legal Environment of the Firm.** The legal environment of business with particular emphasis on the Uniform Commercial Code. Prerequisite: junior standing. One course.

**145. Federal Income Taxation.** Principles of federal income tax laws related to corporations and individuals. Tax planning and the effect of tax law on business decisions will be emphasized. Prerequisite: junior standing and Management Sciences 53. One course.

**151. Investment Management.** Problems of selecting a portfolio of investments emphasizing the economics of the markets and the tools of analysis. Prerequisite: Management Sciences 50, 53, and 110 or equivalents. One course.

**154. Finance.** Problems of financial management of the firm. Cash management, receivables management, short-term financial planning, cost of capital, capital budgeting, dividend policy, lease analysis and long-term financial planning. Prerequisites: Management Sciences 53 and 114 or equivalent. One course.

**161. Marketing Management.** The role of the marketing function in business; product planning, price promotion, and distribution as elements of a total marketing mix. Formal models in solving the marketing mix problem of the firm. Prerequisite: Management Sciences 114. One course.

**171. Production.** An economic and social analysis of designing a production system for an organization, of operating within the designed constraints, and of interactions within the organization and with society. Prerequisites: Management Sciences 53 and 114. One course.

**191, 192. Independent Study.** Directed reading and research. Approval of the instructor and the Director of Undergraduate Studies required.

**193, 194. Independent Study.** Same as 191, 192 but for seniors.

**201S. Market Structure and Performance.** Industrial conduct and performance under various market structures, both in theory and in practice. Evaluation of public policy measures, such as public utility regulation and antitrust action, which are used to improve market performance. Prerequisites: Management Sciences 50 and 110 or consent of instructor. Not open to students who have taken Economics 189 or Economics 198. One course.

**202S. Intermediate Theory of Economic Enterprise.** Competitive market strategies and cooperating decisions, analysis of the efficiency and equilibrium of market structures. Emphasizes the interrelationships of the economic environment and the decision of the enterprise. Prerequisite: Management Sciences 114. One course.

**212S. Seminar in Operations Research.** Topics may include applied operation research, decomposition models of the firm, network analysis, inventory theory, sequencing, or game theory. Prerequisites: Management Sciences 116 and 117 or consent of instructor. One course.

**220S. Administrative Behavior and Organization Design.** Implications of organization structure for the administrator. Various strategies of decomposition of the firm and the interaction of the structural, technical, and social systems. Dysfunctional properties of structure constraining administrative behavior and organizational effectiveness. Prerequisite: Management Sciences 161 or 171. One course.

**231. Intermediate Financial Accounting.** Requirements of investors, auditors, unions, and governments for information about the status and operations of firms and a framework for disclosure of the relevant data. Prerequisite: Management Sciences 53. One course.

**232. Internal Control and Auditing.** The independent auditor's examination of the accounting control system and other evidence as a basis for expressing an opinion on a client's financial statements. Basic audit objectives, standards, ethics, terminology, procedures, and reports. Prerequisites: Management Sciences 137 and 231. One course.

**234. Advanced Financial Accounting.** Accounting for and reporting on the diverse activity of multiproduct, multidivisional, multinational organizations. Organizations with and without profit goals are studied. Prerequisites: Management Sciences 137 and 231. One course.

**236S. Selected Topics in Financial Accounting.** Interrelationships between selected topics and issues in accounting and other disciplines. Prerequisites: Management Sciences 137 and 231. One course.

**237S. Advanced Managerial Accounting.** Evaluating performance in complex organizations. Transfer pricing, inventory systems, the use of linear programming in developing budgets and capital budgeting. Some aspects of the behavioral consequences of performance measurements. Prerequisites: Management Sciences 137 and 231. One course.

**241. Management Strategy.** Structural framework for viewing problems inherent in formulating, implementing, and monitoring corporate strategy. Synthesis of strategic planning process, analysis of the external environment, use of formal models and data bases, and concepts from the functional areas. Prerequisites: Management Sciences 154, 161, and 171 or 137. One course.

**251S. Seminar in Managerial Finance.** Topics to be arranged. Prerequisite: Management Sciences 154. One course.

**261S. Seminar in Marketing.** Topics to be arranged. Prerequisite: Management Sciences 161 or consent of instructor. One course.

**271S. Seminar in Production.** Topics to be arranged. Prerequisite: Management 171. One course.

## DEPARTMENTAL MAJOR

The majors in Management Sciences are not available to students entering Duke after January 1979. All departmental course requirements for majors must be completed by May 1982.

Two baccalaureate degree programs are offered: Bachelor of Arts and Bachelor of Science. The Bachelor of Arts degree permits greater flexibility in allowing the student to develop a sound understanding of the area, while allowing ample time for study of other areas consistent with a liberal arts education. The Bachelor of Science degree program allows a greater depth of study for the preprofessional student. Within each degree program, two majors are offered: management sciences and management sciences/accounting.

Enrollment priority in all courses offered by the department will be given to those students needing the courses for completion of the major requirements.

### For the A.B. Degree

Core Program. Mathematics 31 and 36; Management Sciences 50, 110, 114, 120; Computer Science 51 or equivalent (or demonstrated competence in computer programming.) A course in macroeconomics is recommended. Mathematics 32 can be substituted for Mathematics 36 by students who want to take additional courses in mathematics.

*Required Courses—Management Sciences Major.* Four courses in addition to the core offered by the department, three of which must be numbered 116 or 117 or 137 or 151 or above. One of the following economics courses may count for credit in the Management Sciences major: 139, 153, 154, 155, 243, 244.

*Required Courses—Management Sciences/Accounting Major.* Management Sciences 53, in addition to the core, and three additional courses from the 130, 230 series.

### For the B.S. Degree

Core Program. Mathematics 31 and 36; Management Sciences 50, 53, 110, 114, 120, 154, 161, 241; Economics 51 or 153 or 154; Computer Science 51 or equivalent (or demonstrated competence in computer programming.) Mathematics 32 can be substituted for Mathematics 36 by students who want to take additional courses in mathematics.

*Required Courses—Management Sciences Major.* Management Sciences 171 and three electives in the department, including one seminar.



*Required Courses—Management Sciences/Accounting Major.* Management Sciences 137 and three electives from the 230 series. Elective courses are available to provide reasonable preparation for professional certification as a certified public accountant or certified management accountant. See the Director of Undergraduate Studies for a sequence of courses recommended as preparation for certification as a professional accountant.

## Marine Sciences—The University Program

Professor Costlow (zoology), *Director*; Professor Emeritus Bookhout (zoology); Professor Pilkey\* (geology); Associate Professors Barber (botany and zoology), Forward (zoology), Gutknecht (physiology), Searles† (botany), Sullivan (biochemistry), and Sutherland (zoology); Adjunct Associate Professor Glaeser† (geology); Assistant Professors Christensen† (botany), McClay† (zoology), Ramus (botany), and Rosendahl† (geology); Assistant Medical Research Professors C. Bonaventura and J. Bonaventura (biochemistry)

The interdisciplinary program in the marine sciences makes it possible for qualified juniors and seniors to live and study at the Duke University Marine Laboratory, Beaufort, North Carolina, during the spring semester. The program consists of two courses (104 and 150, 169, 215 or 220) and one seminar, in addition to independent research. A student may continue study at the Marine Laboratory during the summer either by participating in advanced courses or by continuing independent studies initiated during the spring semester.

Applications are to be submitted by 6 October to the Admissions Office, Duke University Marine Laboratory, Beaufort, North Carolina 28516, and should include two letters of recommendation, one of which must be from the Director of Undergraduate Studies of the student's major department. A current transcript is also required. Students will be notified of the action of the review committee prior to registration for the spring term.

### SPRING COURSES AT BEAUFORT

**Homo Sapiens and the Marine Environment.** (Interdisciplinary Course 104.) Economic, legal, medical, political, social, and scientific viewpoints on the effect of society on the marine environment; special emphasis on coastal North Carolina. Lectures and laboratories. One course. *Costlow and staff*

**Physiology of Marine Animals.** (Zoology 150L.) Comparative physiology including ecological and behavioral adaptations. Students may not receive credit for both Zoology 150L and 250L. Prerequisites: introductory biology and Chemistry 12. One course. *Forward*

**Ecological Oceanography.** (Botany 169L, Geology 169, and Zoology 169L.) Dynamics of marine communities in the context of current ecological theory. Life history strategies, competition, predation, diversity, and stability; detailed considerations of benthic and pelagic communities. Students may not receive credit for both Zoology 103L and 169L. Prerequisites: introductory biology and Mathematics 31. One course. *Sutherland*

**Independent Study.** (Botany 192, Geology 192, and Zoology 192.) For junior and senior majors with consent of the Director of Undergraduate Studies and the supervising instructor. One and one-half courses. *Staff*

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\*In residence during spring and summer only.

†In residence during summer only.

**Adaptations of Organisms to the Marine Environment.** (Biochemistry 220.) Basic concepts of biochemistry and variables in the marine environment which evoke adaptive responses. Adaptations at the molecular level and the general topic of biological fitness are considered. Laboratory experiments utilize basic methods of biochemical analysis. Prerequisites: basic biology and chemistry and consent of instructor. One course. *C. Bonaventura or J. Bonaventura*

**Beach and Island Geological Processes.** (Geology 196S.) Half course. *Pilkey*

## SUMMER COURSES AT BEAUFORT

The following courses are described in the listings of the specified departments or in the *Bulletin of the Duke University Marine Laboratory*.

**Introduction to Biological Oceanography.** (Zoology 114L.) One and one-half courses. *Staff (visiting summer faculty)*

**Plant Ecology.** (Botany 147L/247L.) One and one-half courses. *Christensen*

**Ecological Oceanography.** (Botany 169L, Geology 169, and Zoology 169L.) One course. *Sutherland*

**Marine Invertebrate Zoology.** (Zoology 176L.) One and one-half courses. *Bookhout (professor emeritus)*

**Independent Study.** (Botany, Geology, or Zoology 191, 192.) Credits to be arranged. *Staff*

**Marine Ecology.** (Zoology 203L.) One and one-half courses. *Sutherland*

**Marine Microbiology.** (Botany 204L.) One and one-half courses. *Staff*

**Geological Oceanography.** (Geology 205.) One and one-half courses. *Glaeser and Pilkey*

**Marine Phycology.** (Botany 211L.) One and one-half courses. *Searles*

**Membrane Physiology and Osmoregulation.** (Physiology 212.) One and one-half courses. *Gutknecht*

**Biological Oceanography.** (Zoology 214L.) One and one-half courses. *Barber*

**Photosynthetic Physiology of Marine Plants.** (Botany 216.) One and one-half courses. *Ramus*

**Barrier Island Ecology.** (Forestry and Environmental Studies 218 and Botany 218.) One and one-half courses. *Godfrey (visiting summer faculty)*

**Environmental Oceanography.** (Chemistry 230.) One and one-half courses. *Staff*

**Chemical Oceanography.** (Chemistry 240.) One and one-half courses. *Staff*

**Diversity of Plants.** (Botany 244L.) One and one-half courses. *White*

**Physiological Ecology of Marine Animals.** (Zoology 250L.) One and one-half courses. *Ache (visiting summer faculty)*

**Introduction to Marine Geophysics.** (Geology 250.) One and one-half courses. *Rosendahl*

**Marine Invertebrate Zoology.** (Zoology 274L.) One and one-half courses. *Seed (visiting summer faculty)*

**Comparative and Evolutionary Biochemistry.** (Biochemistry 276.) One and one-half courses. *Sullivan*

**Invertebrate Embryology.** (Zoology 278L.) One course. *McClay*

**Marine Invertebrate Larvae.** (Zoology 281L.) One course. *Lehman*

**Seminar.** (Zoology 295S, 296S.) Credits announced each semester. *Staff*

## Mathematics

Professor Warner, *Chairman*; Professor Murray, *Director of Undergraduate Studies*; Assistant Professor L. Smith, *Supervisor of Freshman Instruction*; Professors Allard, Arthur, Reed, Schaeffer, Shoenfield, and Weisfeld; Associate Professors Burdick, R. Hodel, Kitchen, Kraines, Moore, Scoville, and D. Smith; Adjunct Associate Professor Chandra; Assistant Professors Flath, Hardorp, Jackson, Katz, Pardon, Schechter, Reznick, and Wolpert; Visiting Assistant Professor Schoenfelder; Instructor Lawrence ; Part-time Instructor M. Hodel; Visiting Lecturer Brodsky

**19. Precalculus Mathematics.** Selected topics in algebra, trigonometry, and analytic geometry. Students with CEEB achievement scores in mathematics below 530 need this skill course before taking Mathematics 31. Prerequisite: two units of college preparatory mathematics. One course. *Staff*

**31. Introductory Calculus.** Limits and continuity; transcendental functions; techniques and applications of the differential calculus. Prerequisite: three years of college preparatory mathematics. One course. *Staff*

**32. Introductory Calculus.** Theory and applications of the definite integral; techniques of integration; infinite sequences and infinite series. (Not open to students who have had Mathematics 36.) Prerequisite: Mathematics 31. One course. *Staff*

**31P, 32P. Preceptorial.** Elective preceptorial for students enrolled in Mathematics 31 and 32. *Staff*

**31X, 32X. Honors Calculus.** Similar to Mathematics 31 and 32, but more theoretical. Majors in mathematics as well as others who have achievement scores of 760-800 are encouraged to enroll. Occasionally these courses will be offered as seminars. Two courses. *Staff*

**33, 34. Introductory Calculus with Digital Computation.** Introduction to the digital computer, analytical and numerical treatments of limits, differentiation, integration, solution of equations in one variable, elementary transcendental functions, sequences, series, Taylor's formula, applications. Mathematics 33 is prerequisite to Mathematics 34. Two courses. *Staff*

**36. Calculus for the Social Sciences.** Transcendental functions, with special emphasis on the logarithm and exponential functions; theory and limited applications of the definite integral; techniques of integration; partial differentiation with applications; infinite sequences and infinite series. (Not open to students who have had Mathematics 32.) Does not fulfill prerequisite for Mathematics 103. Prerequisite: Mathematics 31. One course. *Staff*

**38. Calculus in the Development of Modern Science.** Mathematical development of topics in the calculus which were central to the scientific revolution; differential equations, Kepler's laws, Newton's scientific achievement, partial differential equations, mathematical models in physics and biology. Intended primarily for students in the humanities. An alternative to Mathematics 32, this

course does not satisfy the prerequisites for any course requiring Mathematics 32. Prerequisite: Mathematics 31 or the equivalent. One course. *Staff*

**53. Basic Statistics.** Statistical concepts involved in making inferences, decisions, and predictions from data. Techniques not emphasized. Not open to students who have had Economics 138 or Psychology 117. One course. *Staff*

**103. Intermediate Calculus.** Solid analytic geometry with vectors, partial differentiation, multiple integrals, elementary differential equations, and complex numbers. Prerequisite: Mathematics 32 or 34. One course. *Staff*

**103P. Preceptorial.** Optional preceptorial for students enrolled in Mathematics 103. *Staff*

**104. Linear Algebra and Applications.** Euclidean  $n$ -space, abstract vector spaces, linear transformations and matrix representation, elementary row operations, determinants, eigenvectors and eigenvalues; and applications to the solution of ill-conditioned simultaneous systems. Prerequisite: Mathematics 32 or 34. One course. *Staff*

**104P. Preceptorial.** Elective preceptorial for students enrolled in Mathematics 104. *Staff*

**103X, 104X. Sophomore Honors Calculus.** Similar to Mathematics 103, 104, but more theoretical. Students who take 31X, 32X are encouraged to enroll. Students continuing from 103X should take 104X rather than 104. Two courses. *Staff*

**105. Intermediate Calculus with Digital Computation.** Same content as 103, but using the computer for solution of calculus problems. The course is a continuation of Mathematics 33, 34. Prerequisite: Mathematics 34, or Mathematics 32 and consent of instructor. One course. *Staff*

**111. Applied Mathematical Analysis I.** Ordinary differential equations, including linear differential equations of order  $n$ ; partial linear differential equations with constant coefficients; topics in vector calculus; Fourier series. Not open to students who have had Mathematics 131. Prerequisite: Mathematics 103. One course. *Staff*

**112. Applied Mathematical Analysis II.** Complex variables, residues, conformal mapping, matrices, Laplace and Fourier Transforms and their applications. Prerequisite: Mathematics 103. One course. *Staff*

**126. Introduction to Linear Programming and Game Theory.** Fundamental properties of linear programs; linear inequalities and convex sets; primal simplex method, duality; integer programming; two person and matrix games. Prerequisites: Mathematics 32 or 34 and 103 and 104 or consent of instructor. One course. *Staff*

**128. Number Theory.** Divisibility properties of integers; prime numbers; congruences; quadratic reciprocity; number-theoretic functions; simple continued fractions; rational approximations. Prerequisite: Mathematics 32 or 34 or consent of the instructor. One course. *Staff*

**129. Introduction to Modern Algebra.** Elementary theory of groups, rings, and fields; construction of basic number systems. Prerequisite: Mathematics 104. One course. *Staff*

**131. Elementary Differential Equations.** Solution of differential equations of elementary types; formation and integration of equations arising in applications.



Not open to students who have had Mathematics 111. Prerequisite: Mathematics 103. One course. *Staff*

**132S. Qualitative Theory of Ordinary Differential Equations.** Qualitative behavior of general systems of ordinary differential equations, with application to biological and ecological systems, oscillations in biochemistry, electrical networks, and the theory of deterministic epidemics. Prerequisite: Mathematics 131 or 111 or consent of the instructor. One course. *Staff*

**135, 136. Probability and Statistics.** Permutations and combinations, total and compound probability, Bayes' formula, Bernoulli's theorem, discrete distributions, central values, moments and mathematical expectation, law of large numbers, probabilities in continuum, continuous distributions, sampling distributions, confidence limits, tests of hypotheses, and analysis of variance. Prerequisites: Mathematics 103 for 135; 135 and 104 for 136. Two courses. *Staff*

**135P, 136P. Preceptorial.** Optional preceptorials for students enrolled in Mathematics 135, 136. *Staff*

**139, 140. Advanced Calculus.** Differential and integral calculus of functions of several variables; spaces of continuous functions; Fourier series; existence theorems and uniqueness theorems for differential equations; line and surface integrals; Green's theorem and Stokes' theorem; power series and analytic functions. Prerequisites: Mathematics 103 and 104 for 139; 139 for 140. Two courses. *Staff*

**152. List Processing and Data Structures.** (Also listed as Computer Science 152.) One course. *Staff*

**161. Numerical Solution of Ordinary Differential Equations.** Basic existence and uniqueness considerations; algorithmic procedures for step by step integration; stability theory and its limitations; accuracy analysis and numerical procedures for determining it; analogue methods and their accuracy and stability characteristics. Prerequisites: Mathematics 103 and 104. One course. *Murray*

**171S. Elementary Topology.** Basic set theory; metric spaces; topological spaces; continuity; basic topological properties including compactness and connectedness. Prerequisites: Mathematics 103 and 104. One course. *Staff*

**181. Complex Analysis.** Complex numbers, analytic functions, complex integration, Cauchy's theorem, Taylor and Laurent series, theory of residues, argument and maximum principles, conformal mapping. Prerequisite: Mathematics 103. One course. *Staff*

**183. Introduction to Statistical Methods.** Emphasis on the classical techniques of hypothesis testing and point and interval estimation, using the binomial normal, t, F, and chi square distributions. Prerequisite: Mathematics 32 or 34 or consent of the instructor. One course. *Staff*

**187. Introduction to Mathematical Logic.** Propositional calculus, predicate calculus. Godel completeness theorem, applications to formal number theory, incompleteness theorem, additional topics in proof theory or computability. Prerequisites: Mathematics 103 and 104 or Philosophy 103. One course. *Staff*

**191, 192. Independent Study.** Directed reading and research. Admission by approval of instructor and Director of Undergraduate Studies. Two courses. *Staff*

**193, 194. Independent Study.** Same as 191, 192, but for seniors. Two courses. *Staff*

**196S. Seminar in Mathematical Model Building.** Real models, mathematical models, axiom systems as used in model building, deterministic and stochastic models, linear optimization, competition, graphs and networks, growth processes, evaluation of models. Term project: model of a nonmathematical problem. Prerequisite: Mathematics 103 and 104. One course. *D. Smith*

**197S. Seminar in Mathematics.** Primarily intended for juniors and seniors majoring in mathematics. Content of course determined by instructor. Prerequisite: Mathematics 103 and 104. One course. *Staff*

### **For Seniors and Graduates**

**200. Introduction to Algebraic Structures I.** Laws of composition, groups, rings; isomorphism theorems; axiomatic treatment of natural numbers; polynomial rings; division and Euclidean algorithms. Prerequisite: Mathematics 104 or equivalent. One course. *Staff*

**201. Introduction to Algebraic Structures II.** Vector spaces; matrices and linear transformations; fields; extensions of fields; construction of real numbers. Prerequisite: Mathematics 200 or equivalent. One course. *Staff*

**203. Basic Analysis I.** Topology of  $\mathbb{R}^n$ , continuous functions, uniform convergence, compactness, infinite series, theory of differentiation, and integration. Prerequisite: Mathematics 104. One course. *Staff*

**204. Basic Analysis II.** Inverse and implicit function theorems, differential forms, integrals on surfaces, Stokes' theorem. Prerequisite: Mathematics 203. One course. *Staff*

**221, 222. Numerical Analysis I, II.** For a description of these courses, see Computer Science 221, 222. Two courses. *Gallie, Patrick, or Utiku*

**230. Mathematical Methods in Physics and Engineering I.** Heat and wave equations; initial and boundary value problems; Fourier series; Fourier transforms; potential theory. Prerequisite: Mathematics 103 and 104 or equivalent. One course. *Staff*

**231. Mathematical Methods in Physics and Engineering II.** Cauchy's theorem; calculus of residues; power and Laurent series; conformal mapping; applications to fluid flow and potential theory; integral equations; approximation of eigenvalues. Prerequisite: Mathematics 103 and 104 or equivalent. One course. *Staff*

**234. Mathematics for Quantum Mechanics.** Hilbert space; self-adjoint operators; the mathematical model of quantum mechanics; commutation relations; spectral analysis of Hamiltonians; time dependent scattering theory. Prerequisite: Mathematics 230 and 231 or equivalent. One course. *Staff*

**235. Topics in Mathematical Physics.** Group representations, perturbation theory, quantum field theory, statistical mechanics or general relativity. Prerequisite: Mathematics 231 or equivalent. One course. *Staff*

**238, 239. Topics in Applied Mathematics.** Conceptual basis of applied mathematics, combinatorics, graph theory, game theory, mathematical programming, or numerical solution of ordinary and partial differential equations. Prerequisite: Mathematics 103 and 104 or equivalent. Two courses. *Staff*

**240. Applied Stochastic Processes.** Applications of probability theory and stochastic processes to economics and environmental science. Markoff chains, optional stopping, queuing theory, decision theory, birth and death processes, and

the Monte-Carlo method. Prerequisite: Mathematics 135 or equivalent. One course. *Staff*

**241. Linear Models.** Geometric interpretation; multiple regression; analysis of variance; experimental design; analysis of covariance. Prerequisite: Mathematics 136 or equivalent. One course. *Staff*

**242. Multivariate Statistics.** Multinormal distributions; multivariate general linear model; Hotelling's  $T^2$  statistic; Roy union-intersection principle; principal components; canonical analysis; factor analysis. Prerequisite: Mathematics 241 or equivalent. One course. *Staff*

**248, 249. Topics in Statistics.** Analysis of variance, design of experiments, nonparametric statistics, foundations of statistical inference. Prerequisite: Mathematics 222 or equivalent. Two courses. *Staff*

**250. Introductory Mathematical Logic.** First-order logic, completeness theorem, compactness theorem, introduction to recursive functions, incompleteness theorem. Prerequisite: Mathematics 187 or Mathematics 200 or equivalent. One course. *Staff*

**251. Set Theory I.** Zermelo-Fraenkel axioms; ordinals, and cardinals; models of set theory; constructible sets. Prerequisite: Mathematics 187 or Mathematics 200 or equivalent. One course. *Staff*

**252. Set Theory II.** Forcing, large cardinals, determinateness, and other advanced topics. Prerequisite: Mathematics 251. One course. *Staff*

**258, 259. Topics in Logic.** Model theory, recursion theory, set theory, or other fields of logic. Prerequisite: Mathematics 250 or equivalent. Two courses. *Staff*

**260. Groups, Rings, Modules.** Elementary categorical algebra; groups, rings; modules; linear and multilinear algebra. Prerequisite: Mathematics 201 or equivalent. One course. *Staff*

**261. Commutative Algebra.** Fields; Noetherian rings and modules; Dedekind domains. Prerequisite Mathematics 260 or equivalent. One course. *Staff*

**268, 269. Topics in Algebra.** Algebraic number theory, algebraic K-theory, homological algebra, or topological algebra. Prerequisite: Mathematics 260. Two courses. *Staff*

**270. General Topology.** Basic topological properties, including compactness, connectedness, separation axioms, and countability properties; metric spaces and completeness; product spaces and function spaces. Prerequisite: Mathematics 139 or equivalent. One course. *Staff*

**271. Algebraic Topology.** Fundamental group and covering spaces; homology groups of cell complexes; classification of compact surfaces; the cohomology ring and Poincaré duality for manifolds. Prerequisites: Mathematics 171S and 200 or equivalent. One course. *Staff*

**278, 279. Topics in Topology.** Point set, algebraic, geometric, or differential topology. Prerequisite: Consent of instructor. Two courses. *Staff*

**280. Differential Analysis.** Differential calculus; ordinary differential equations; flows; Lie bracket; total differential equations; first order partial differential equations; deRham theory. Prerequisite: Mathematics 140 or equivalent. One course. *Staff*

**281. Real Analysis I.** Measures; Lebesgue integral;  $L^p$ -spaces; Daniell integral, differentiation theory, product measures. Prerequisite: Mathematics 140 or equivalent. One course. *Staff*

**282. Real Analysis II.** Metric spaces; fixed point theorems; Baire category theorem; Banach spaces; fundamental theorems of functional analysis; Fourier transform. Prerequisite: Mathematics 281 or equivalent. One course. *Staff*

**283. Linear Operators.** Bounded and unbounded operators on Banach and Hilbert spaces; symmetric and self-adjoint operators; Banach algebras; spectral theorem; unitary groups; compact operators; Fredholm theory; accretive operators; semigroups of operators. Prerequisite: Mathematics 282 or equivalent. One course. *Staff*

**284. Topics in Functional Analysis.** Advanced spectral analysis, operator algebras, nonlinear functional analysis, or structure theory of Banach spaces. Prerequisite: Mathematics 282 or equivalent. One course. *Staff*

**285. Complex Analysis.** Complex calculus; conformal mapping; Riemann mapping theorem, Riemann surfaces. Prerequisite: Mathematics 140 or equivalent. One course. *Staff*

**286. Topics in Complex Analysis.** Geometric function theory, function algebras, several complex variables, uniformization, or analytic number theory. Prerequisite: Mathematics 285 or equivalent. One course. *Staff*

**288, 289. Topics in Analysis.** Harmonic analysis, dynamical systems, geometric measure theory, or calculus of variations. Prerequisite: Mathematics 281 and 285 or equivalent. Two courses. *Staff*

**290. Probability.** Random variables; independence; expectations; laws of large numbers; central limit theorem; Markoff chains. Prerequisite: Mathematics 281 or equivalent. One course. *Staff*

**291. Stochastic Processes.** Measures on function spaces; conditional expectation; Markoff processes; martingales; diffusions; Brownian motion and stochastic integrals. Prerequisite: Mathematics 290 or equivalent. One course. *Staff*

**293, 294. Topics in Probability Theory.** Ergodic theory, multiparameter stochastic processes and random fields, stochastic control theory, or stochastic differential equations. Prerequisite: Mathematics 291 or equivalent. Two courses. *Staff*

**297. Fourier Analysis and Distribution Theory.** Tempered distributions, Fourier transforms, classical inequalities, oscillatory integrals. Prerequisites: Mathematics 140 and 285 or equivalent. One course. *Staff*

**298. Partial Differential Equations I.** Fundamental solutions of linear partial differential equations, hyperbolic equations, characteristics; Cauchy-Kovalevskaja theorem; propagation of singularities. Prerequisite: Mathematics 297 or equivalent. One course. *Staff*

**299. Partial Differential Equations II.** Elliptic boundary value problems; regularity theorems; the diffusion equation; nonlinear equations. Prerequisite: Mathematics 298 or equivalent. One course. *Staff*

Mathematics courses 210, 211, 212, 213, and 214 are normally offered in the summer only. For information, see the *Bulletin of Duke University Summer Session*.



## DEPARTMENTAL MAJOR

*Prerequisites.* Mathematics 31, 32.

*Major Requirements.* Mathematics 103, 104; and six additional courses in mathematics numbered above 100 which must include one of the following year sequences: Mathematics 139, 140; Mathematics 200, 201; or Mathematics 203, 204. Mathematics 183 may not be counted among the six courses, and at most two of the following three courses may be counted: 152, 221, 222.

It is recommended that majors take a one year sequence in a natural science other than mathematics. For a student considering graduate study in mathematics, a reading knowledge of two foreign languages (often French, German, or Russian) is most desirable.

## School of Medicine—Basic Science Courses Open to Undergraduates

Qualified students in arts and sciences may select courses from the following offered by the graduate departments associated with the School of Medicine. A major is not offered to undergraduates in any of the departments listed below. For permission to register for these courses and for further information, see Associate Professor Counce (anatomy); Associate Professor Richardson (biochemistry); Assistant Professor Vanaman (microbiology and immunology); and Associate Professor Padilla (physiology). The following courses are described in the *Bulletin of the Graduate School*.

### ANATOMY

**151. Anatomy of the Lower Extremities as it Relates to Locomotion.** One course. *Bassett*

**193, 194. Independent Study.** Open to qualified juniors and seniors with written consent of instructor. Two courses. *Staff*

**215. Contractile Processes.** Prerequisite: consent of instructor. (Also listed as Physiology 216.) Offered in alternate years. One course. *Anderson, Jöbsis, or Reedy*

**219. Molecular and Cellular Bases of Development and Differentiation.** Prerequisite: consent of instructor. (Also listed as Biochemistry 219, Microbiology 219, Pathology 219, and Physiology 230.) Fall. One course. *Padilla and staff*

**231. Human Evolution.** Prerequisite: Anthropology 93 or equivalent. One course. *Cartmill*

**240. Mechanisms of Biological Motility.** Prerequisite: written consent of instructor. One course. *Adelman*

**264. Mammalian Embryology and Developmental Anatomy.** Prerequisites: one year of zoology and consent of instructor. One course. *Duke*

**280. Structure and Assembly of Macromolecules.** Prerequisites: cytology or equivalent, and consent of instructor. One course. *Corless, Erickson, Longley, Moses, Reedy, and Robertson*

**286. The Light Microscope, the Electron Microscope and X-ray Diffraction in Biology.** Prerequisites: cytology or equivalent; calculus; and one year each of physics and general chemistry; consent of instructor. One course. *Corless, Erickson, Longley, Moses, Reedy, and Robertson.*

**288S. The Cell in Development and Heredity.** Prerequisites: genetics or cell biology and consent of instructor. (Also listed as Zoology 288S, and under the University Program in Genetics.) Half-course. *Counce*

**299. Neuroanatomical Basis of Behavior.** One course. *Hall and Peele*

## BIOCHEMISTRY

**209, 210. Independent Study.** One or two courses by arrangement. *Staff*

**216. Molecular Genetics.** Prerequisites: introductory courses in biochemistry and genetics. (Also listed under Genetics.) One course. *Guild and Staff*

**220. Adaptations of Organisms to the Marine Environment.** One course. (Given at Beaufort.) *C. Bonaventura and J. Bonaventura*

**227. Introductory Biochemistry I: Intermediary Metabolism.** Prerequisite: organic chemistry. (Also listed as Botany 227.) One course. *Sage and Siegel*

**228. Introductory Biochemistry II: Molecular Biology.** Prerequisite: Biochemistry 227 or equivalent. (Also listed as Botany 228.) One course. *Greenleaf, Webster, and staff*

**248. Introductory Biochemistry.** Prerequisites: Chemistry 151, one year of college physics (second semester may be concurrent), and Mathematics 32, or consent of instructors. (Also listed as Botany 248.) One course. *Hill, Fridovich, and Bell*

**265S, 266S. Seminar.** Topics and instructors announced each semester. Half course; or variable. *Staff*

**276. Comparative and Evolutionary Biochemistry.** (Also listed under Marine Sciences.) (Given at Beaufort.) One and one-half courses. *Sullivan*

**291. Physical Biochemistry.** Prerequisite: Chemistry 161-162 or equivalent. One course. *Kim, Reynolds, Richardson, and Tanford*

**292. Proteins and Enzymes.** One course. *Fridovich, Hill, Rajagopalan, and Richardson*

**297. Intermediary Metabolism.** One course. *Bell, Greene, Kirshner, and Siegel*

## MICROBIOLOGY AND IMMUNOLOGY

**103L. General Microbiology.** Prerequisite: introductory biology. (Also listed as Botany 103L.) Fall. One course. *Johnson and Wheat (microbiology)*

**209-210. Independent Study.** A laboratory or library project. One or two courses by arrangement. *Staff*

**221. Medical Microbiology.** Prerequisite: consent of instructor. One course. *Joklik and staff*

**221L. Medical Microbiology.** Prerequisite: consent of instructor. One and one-half courses. *Joklik and staff*

**233. Principles of Microbiology and Immunology.** Prerequisites: Chemistry 152 and Zoology 160 or Biochemistry 248. (Also listed as Botany 233L.) One course. *Burns, Dawson, Joklik, and Willett*

**244. Principles of Immunology.** Prerequisites: Zoology 160, Chemistry 151, 152, and consent of instructor. (Also listed as Zoology 244.) One course. *Amos, Dawson, and McClay*

## PHYSIOLOGY

**200. Human Physiology.** Five lectures per week, with additional review and clinical correlation conferences, and elective tutorials. Primarily for first year medical students; other students need consent of instructor to enroll. Two courses. *Staff*

**204. Introduction to Modern Physiology.** Prerequisites: Physiology 200 or equivalent and consent of instructor. One course. *Blum and staff*

**208. Respiratory System in Health and Disease.** Half-course. *Kylstra and Salzano*

**212. Marine Membrane Physiology and Osmoregulation.** (Also listed under Marine Sciences.) (Given at Beaufort.) One and one-half courses. *Gutknecht and staff*

**215. Topics in Developmental Physiology.** Half-course. *Lieberman and Padilla*

**216. Contractile Processes.** Prerequisite: consent of instructor. (Also listed as Anatomy 215.) One course. *Anderson, Jöbsis, Johnson*

**217. Membrane Transport.** Half-course. *Hall, Lauf, Mandel, and Simon*

**221. Electrophysiological Techniques.** Prerequisites: Biomedical Engineering 101 or Physiology 225 or consent of instructor. (Also listed as Biomedical Engineering 221.) One course. *Wachtel and staff*

**222. Marine Electrobiolgy.** Prerequisite: consent of instructor. (Given at Beaufort.) One and one-half courses. *Wachtel and Wohlbarst*

**230. Molecular and Cellular Bases of Development.** (Also listed as Anatomy 219, Biochemistry 219, Microbiology 219, and Pathology 219.) Fall. One course. *Padilla and staff*

**230S. Seminar.** Optional seminar offered in conjunction with Physiology 230. Half-course. *Padilla and staff*

**260. Cell Growth and Differentiation.** Spring only. One course. *Padilla and Jakoi*

## Medieval and Renaissance Studies Program

Professor Young, *Chairman of the Committee on Medieval and Renaissance Studies*

The Program in Medieval and Renaissance Studies, an interdisciplinary major, is designed to provide the student with a well-rounded understanding of the historical, cultural, and social forces that shaped the medieval and Renaissance periods. The program is divided into four areas of study: fine arts (art and music); history; language and literature (English, French, German, Greek, Italian, Latin, and Spanish); and philosophy-religion.

A major consists of at least eight courses drawn from the nonintroductory courses of the four areas of study, including three courses in each of the two areas. Besides the courses specifically listed (under departmental headings) in the medieval and Renaissance periods, provision may be made for independent study in any of the four areas. Each program is tailored to the needs and interests of the student under the supervision of a committee consisting of faculty members from appropriate departments.

After discussion with the chairman of the Committee on Medieval and Renaissance Studies, the student submits a provisional program of study outlining special interdisciplinary interests. Normally the program is planned well before the

end of the sophomore year to allow time to acquire a working knowledge of languages pertinent to specific interests.

The courses listed below are among those now available for the fulfillment of the major prerequisites and requirements. They are described under the listings of the specified departments.

#### DEPARTMENT OF ART

- 133. Medieval Architecture. *Sunderland*
- 134. Medieval Painting and Sculpture. *Sunderland*
- 135. Art of Northern Europe in the Fifteenth and Sixteenth Centuries. *Staff*
- 137. Fifteenth-Century Italian Art. *Goffen or Spencer*
- 138. Sixteenth-Century Italian Art. *Goffen or Spencer*
- 144. Renaissance and Baroque Architecture. *Sunderland*
- 233. Early Medieval Architecture. *Sunderland*

#### DEPARTMENT OF CLASSICAL STUDIES

##### Latin

- 87, 88. Sight Reading in Classical, Medieval, and Renaissance Latin. *Staff*
- 221. Medieval Latin I. *Newton*
- 222. Medieval Latin II. *Newton*

##### Classical Studies

- 117. Ancient Mythographers. *Newton*

#### DEPARTMENT OF ENGLISH

- 112. English Literature of the Middle Ages. *Reiss*
- 113. Chaucer. *DeNeef, Nygard, Reiss, or Schwartz*
- 121. English Literature of the Sixteenth Century. *DeNeef*
- 123, 124. Shakespeare. *DeNeef, Jones, or G. Williams*
- 125. English Literature of the Early Seventeenth Century. *DeNeef*
- 127. Milton. *DeNeef or Price*
- 129. English Drama from the Middle Ages through the Eighteenth Century. *Clum or Reardon*
- 207. Old English Grammar and Readings. *Nygard or Reiss*
- 208. History of the English Language. *Nygard or Reiss*
- 210. Old English Literary Tradition. *Nygard or Reiss*
- 212. Middle English Literary Tradition. *Nygard or Reiss*
- 215. Chaucer. The Canterbury Tales. *Nygard or Reiss*
- 216. Chaucer. Troilus and Criseyde and the minor poems. *Nygard or Reiss*
- 221. English Prose and Poetry of the Sixteenth Century. *DeNeef*
- 223. Spenser. *DeNeef*
- 224. Shakespeare. *G. Williams*
- 225, 226. Tudor and Stuart Drama, 1500–1642. *Randall*
- 229, 230. English Literature of the Seventeenth Century. *DeNeef, Jackson, Randall, or Williams*
- 232. Milton. *DeNeef*

#### DEPARTMENT OF GERMANIC LANGUAGES AND LITERATURE

- 205, 206. Middle High German. *Rosenberg*
- 215S. Seventeenth-Century Literature. *Borchardt*
- 216. History of the German Language. *Rosenberg*
- 217S. Renaissance and Reformation Literature. *Borchardt*

#### DEPARTMENT OF HISTORY

- 103. The Economic, Social, and Political Institutions of Europe, 1250–1600. *Witt*
- 104. The Intellectual Life of Europe, 1250–1600. *Witt*
- 105. Political and Constitutional History of England. *J. Scott*
- 107. Social and Cultural History of England. *Ferguson*
- 133. Medieval Europe, 300–1000 A.D. *Young*
- 134. Medieval Europe, 1000–1400 A.D. *Young*
- 154. Medieval England. *Young*
- 173. History of Spain and the Spanish Empire from Late Medieval Times. *TePaske*
- 195A–196A. Renaissance Intellectual History. *Witt*
- 195N–196N. The English Renaissance. *Ferguson*
- 221. Problems in the Economic and Social History of Europe, 1200–1700. *Witt*



222. Problems in European Intellectual History, 1250–1550. *Witt*  
 237S. Europe in the Early Middle Ages. *Young*  
 238S. Europe in the High Middle Ages. *Young*  
 267S–268S. From Medieval to Early Modern England. *Ferguson*

#### DEPARTMENT OF MUSIC

- 159S. Music History IV: History of Music to 1600. *Kirkendale or Seebass*  
 161. Medieval Music. *Seebass or Herlinger*  
 166S. The Renaissance Madrigal. *Saville*

#### DEPARTMENT OF PHILOSOPHY

119. Medieval Philosophy. *Mahoney*  
 120. Late Medieval and Renaissance Philosophy. *Mahoney*  
 218. Medieval Philosophy. *Mahoney*

#### DEPARTMENT OF RELIGION

135. Jewish Religious Thought. *Bland*

#### DEPARTMENT OF ROMANCE LANGUAGES

##### French

- 106S. Montaigne and Self-Portraiture. *Tetel*  
 114S. The Sixteenth Century. *Tetel or Vincent*  
 117S. Masterpieces of French Medieval Literature. *Ripley*  
 119. French Drama of the Seventeenth Century. *Jackson*  
 213. French Literature of the Seventeenth Century. *Staff*  
 214. The "Moralistes" of the Seventeenth Century. *Staff*  
 219. Old French Literature. *Vincent*  
 225. French Prose of the Sixteenth Century. *Tetel*  
 226S. Topics in Renaissance Poetry. *Tetel*

##### Italian

141. Masterworks of Italian Literature in English Translation. *Caserta*  
 183. Readings in Italian Literature. *Caserta*  
 284. Dante. *Caserta*  
 285. Dante. *Caserta*  
 288. The Renaissance. *Tetel*

##### Spanish

170. The Picaresque Novel. *Garci-Gómez*  
 117S. Spanish Traditional Poetry. *Garci-Gómez*  
 161. Spanish Literature of the Renaissance and the Baroque. *Miller or Wardropper*  
 167. Golden Age Literature: Cervantes. *Staff*  
 170. The Picaresque Novel. *Garci-Gómez*  
 251. The Origins of Spanish Prose Fiction. *Wardropper*  
 252S. Spanish Lyric Poetry Before 1700. *Wardropper*  
 253. The Origins of the Spanish Theater. *Wardropper*  
 257. History of the Spanish Language. *Garci-Gómez*  
 258. Medieval Literature. *Garci-Gómez*  
 265. Cervantes. *Wardropper*  
 266. Drama of the Golden Age. *Wardropper*

##### Romance Languages

124. Continental Humanism. *Tetel*

## Music

Associate Professor Tirro, *Chairman*; Assistant Professor Henry, *Director of Undergraduate Studies*; Professors Bone, Bryan, Douglass, Hanks, Kirkendale, and Withers; Associate Professor Saville; Assistant Professors Herlinger and Seebass; Resident Artists Ciompi and Williams; Instructor Todd; Visiting Professor Ward; Lecturers Sharon and B. Smith; Artist Associates Erdberg, Gilmore, Gress, Knight, Mizesko, Pederson, Plumb, Raimi, Stewart, and Weddle; Staff Associates Cabbage, Evans,

Lail, Lowe, Otto, Parkins, Peck, Pedersen, Phelps, Ruggero, D. Smith, and Turner;  
Librarian Hammond

## THEORY AND COMPOSITION

**7-8. Dictation and Sight-Singing.** Techniques of aural analysis and development of sight-reading skills. To be taken concurrently with Music 65, 66, or 65X, 66X. Skill courses. Half-course each semester. *Plumb*

**36. Acoustics and Music.** Physical principles underlying musical instruments, room acoustics, and the human ear. Analysis, reproduction, and synthesis of musical sounds. No previous knowledge of physics necessary. (Also listed as Physics 36.) One course. *Lawson*

**65. Fundamentals of Music Theory.** Physical properties of sound; principles of diatonic tonal organization; melodic and harmonic constructions; elementary counterpoint and figured bass. Prerequisite: basic knowledge of musical notation and vocabulary. To be taken concurrently with Music 7. One course. *Douglass*

**66. Tonal Harmony.** Harmonic language of eighteenth- and nineteenth-century classicism; functional chromaticism, sectional forms. Concurrent registration in Music 8 is required. Prerequisites: Music 65 and 7. One course. *Douglass*

**65X. Fundamentals of Music Theory.** Same as Music 65, but for music majors or those planning to major in music. One course. *Herlinger*

**66X. Tonal Harmony.** Same as 66 but for music majors or those planning to major in music. Prerequisites: Music 65X and 7. One course. *Herlinger*

**67S, 68S. Composition I.** Composing original music in smaller forms for voice, piano, and other instruments. Studies in compositional techniques. Prerequisite: Music 65X, 66X, or consent of instructor. Two courses. *Tirro*

**107-108. Keyboard Theory.** Harmonic principles of tonal music applied to the keyboard; score reading, figured bass, melodic harmonization, modulation, transposition. To be taken concurrently with Music 115-116. Skill course. Prerequisites: Music 65X-66X, 7-8, and keyboard proficiency. Half-course each semester. *Parkins*

**115S. Modal Counterpoint.** Polyphonic practice of the fifteenth and sixteenth centuries; sacred and secular music. To be taken concurrently with Music 107. Prerequisite: Music 7-8, 65X, 66X. One course. *Tirro*

**116S. Tonal Counterpoint.** Polyphonic practice of the seventeenth and eighteenth centuries; sacred and secular music. To be taken concurrently with Music 108. Prerequisite: Music 107, 115S. One course. *Tirro*

**117S, 118S. Music Theory III: Composition and Analysis.** The development of technical and expressive means in various media and styles. Original instrumental or choral work required. Prerequisites: Music 116S, 139, 158, or consent of instructor. Two courses. *Ward*

**122. Orchestration.** Characteristics and transpositions of the instruments. Scoring for symphony orchestra, concert band, and string, woodwind, brass, and percussion ensembles from pre-existing piano scores, or the student's original compositions. Prerequisite: Music 116S. One course. *Bryan*

**123, 124. Jazz Improvization.** Prerequisite: consent of instructor. Half-course. *Williams*

**126, 127. Experimental Music.** Development of skills for composing music, utilizing either computer synthesized sound or components in the electronic music

studio. Composition for conventional and nonconventional instruments. Prerequisite: consent of instructor. Two courses. *Tirro*

**130T, 131T. Performance Practice (Organ) I, II.** Analytical and practical study of organ compositions from various epochs. Registration, fingering, pedaling, ornamentation, touch, and *notes inégales* as described in ancient theoretical treatises and comments of composers. Paper and performances required. Prerequisite: one year of organ instruction at Duke or the equivalent, and consent of instructor. Music 130T is prerequisite to 131T. Two courses. *Douglass*

**132T, 133T. Performance Practice (Organ) III, IV.** Prerequisite: Music 131T for 132T, 132T for 133T. Two courses. *Douglass*

## HISTORY AND LITERATURE

**125. Masterworks of Music.** Historical, biographical, and analytical study of works by major composers of the seventeenth through the twentieth centuries. One course. *Staff*

**137. Ethnomusicology.** Introduction to listening to and understanding non-Western musical instruments and systems. Historical, sociological, and aesthetic concepts. One course. *Seebass*

**138. The Music of Southeast Asia.** Traditional music of Indonesia, Malaya, and the Southeast Asian peninsula, including historical, sociological, and aesthetic considerations. One course. *Seebass*

**139. Twentieth-Century Music.** Influential creative stylistic developments in music of the present century. A critical survey of works by Bartok, Berg, Schonberg, Stravinsky, and Webern as a means of establishing a relative standard of values for subsequent independent exploration. Prerequisite: a one-year course in music theory or literature, or consent of instructor. One course. *Todd*

**156S. Music History I: History of Music from 1600 to 1750.** Prerequisites: Music 7-8, 65, 65X, or consent of instructor for music majors; only consent of instructor for nonmajors. One course. *Saville or Kirkendale*

**157S. Music History II: History of Music from 1750 to 1830.** Prerequisites: Music 7-8, 65, 65X, or consent of instructor for music majors; only consent of instructor for nonmajors. One course. *Bryan or Kirkendale*

**158S. Music History III: History of Music from 1830 to 1910.** Prerequisites: Music 7-8, 65, 65X or consent of instructor for music majors; only consent of instructor for nonmajors. One course. *Todd*

**159S. Music History IV: History of Music to 1600.** Prerequisite: Music 7-8, 65, and two courses in music history, or consent of instructor for music majors; only consent of instructor for nonmajors. (Also listed under Medieval and Renaissance Studies.) One course. *Kirkendale or Seebass*

**160. History of the Organ and Its Literature.** Historical survey of the organ from about 1450 to 1950, emphasizing development of the major national styles of building and composition; historical roots of the Flentrop organ. Prerequisite: one course in music theory or literature or consent of instructor. One course. *Douglass*

**161. Medieval Music.** Medieval styles and concepts represented in different vocal and instrumental genres; the composers and the poets and their historical and artistic environment. Prerequisite: one course in music theory or literature, or

consent of the instructor. (Also listed under Medieval and Renaissance Studies.)  
One course. *Herlinger or Seebass*

**163. Music in the Eighteenth Century.** Baroque, rococo, and classical styles and concepts represented in different instrumental and vocal genres; the composers and their historical and artistic environments. Prerequisite: one course in music theory or literature, or consent of instructor. One course. *Bryan or Kirkendale*

**164. Music in the Nineteenth Century.** Romantic and postromantic music; its relation to the artistic and literary movements of the century. Prerequisite: one course in music theory or literature, or consent of instructor. One course. *Todd*

**165. Opera Literature.** History of the operatic idea from the Florentine Camerata in the late sixteenth century to the present. Relationship of music and text; opera as social commentary; changing forms and styles. One course. *Saville or Todd*

**166S. The Renaissance Madrigal.** History of the Italian madrigal and related forms from fourteenth-century Ars Nova through the Renaissance and into the early baroque periods. Consideration of musical, poetic, and cultural interrelationships. Prerequisite: ability to read music. One course. *Saville*

**174. Introduction to Jazz.** A multidisciplinary survey for nonmajors; examines musical, aesthetic, sociological, and historical aspects of jazz. One course. *Tirro or Williams*

## INDEPENDENT STUDY AND SEMINARS

Admission to these courses will be subject to the approval of the Director of Undergraduate Studies and the instructor. The instructor and course content will be established in accordance with the individual student's interests and capacities.

**179, 180. Independent Study in Musical Performance.\*** Open only to sophomores possessing an exceptional technical and interpretive command of a musical medium. Prerequisites: previous registration in private instruction in applied music at Duke, audition, and consent of instructor. Two courses. *Staff*

**181, 182. Independent Study in Musical Performance.\*** Same as 179, 180, but for juniors. Two courses. *Staff*

**183, 184. Independent Study in Musical Performance.\*** Same as 179, 180, but for seniors. Two courses. *Staff*

**185S, 186S. Seminar in Music.** Primarily for junior and senior music majors. Topics to be announced. Prerequisite: consent of instructor. Two courses. *Staff*

**191, 192. Independent Study.** Directed reading, research, and musical analysis within a prescribed area of musical literature. Open only to qualified students in the junior year, by consent of the department. One or two courses. *Staff*

**193, 194. Independent Study.** Same as 191, 192, but for seniors. One or two courses. *Staff*

**195S. Introduction to Music Research.** Library sources, historical methods, and the history of musical scholarship. Preparation for honors papers, but not

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\*The schedule of fees for private lessons as published on page 191 is applicable to courses 179, 180, 181, 182, 183, 184.



restricted to candidates for graduation with distinction. Prerequisite: consent of instructor. One course. *Kirkendale*

**196S. Seminar in Musicology.** Specialized historical research on a topic to be arranged. Prerequisite: Music 195S or consent of instructor. One course. *Kirkendale*

## MUSIC EDUCATION AND PEDAGOGY

**57S, 58S, 59S, 60S. Vocal Diction.** Problems of diction for the singer. Study of standard pronunciation with special emphasis on phonetics in Italian, English, German, and French. Four half-courses. *Hanks*

**128. Instrumental Conducting.** Development of techniques of conducting instrumental ensembles with emphasis on orchestral repertoire. Score-reading and analysis, principles of interpretation, and practical conducting experience. Prerequisite: Music 116S or consent of instructor. One course. *Bone*

**129. Choral Conducting.** Development of techniques of conducting vocal repertoire, ranging from church anthems to large-scale works. Score-reading and analysis, principles of interpretation, and practical conducting experience. Prerequisite: Music 116S or consent of instructor. One course. *B. Smith*

**151. Public School Music Education (Elementary).** Half-course. *Otto*

**152. Public School Music Education II (Elementary).** Half-course. *Otto*

## APPLIED MUSIC

The study of applied music concerns the understanding of music literature through performance. A limited number of students may receive private instruction in instruments and voice for Duke University credit. Admission is by qualification and determined through audition. Students must arrange an audition with the instructor prior to registration, either in person or by tape recording. For those students who wish to study privately but do not qualify for university level instruction, a list of music teachers in the immediate area who are available to Duke students can be obtained from the Music Department Office. Class instruction is offered in small and large ensembles. All courses may be repeated for credit. Not more than two ensembles may be taken concurrently for credit.

### Instruction: ½ hour, quarter course credit

- 80. Piano. *Evans, Phelps, Ruggero, Sharon, D. Smith, or Withers*
- 81. Strings. *Ciampi, Cabbage, Erdberg, Plumb, or Raimi*
- 82. Woodwinds. *Gilmore, Henry, Knight, Pederson, or Weddle*
- 83. Brass. *Bryan, Gress, Mizesko, or Stewart*
- 84. Percussion. *Staff*
- 85. Voice. *Hanks or Lail*
- 86. Organ. *Douglass or Parkins*
- 87. Harpsicord. *Parkins*
- 88. Class Piano. *Staff*
- 89. Class Winds. *Staff*

### Instruction: 1 hour, half-course credit

- 90. Piano. *Evans, Phelps, Ruggero, Sharon, D. Smith, or Withers*
- 91. Strings. *Ciampi, Cabbage, Erdberg, Mueller, Plumb, or Raimi*
- 92. Woodwinds. *Gilmore, Henry, Knight, Pederson, or Weddle*
- 93. Brass. *Bryan, Gress, Mizesko, or Stewart*
- 94. Percussion. *Staff*
- 95. Voice. *Hanks or Lail*
- 96. Organ. *Douglass or Parkins*
- 97. Harpsicord. *Parkins*

### Ensemble Classes: quarter-course credit; pass/fail

- 100. Symphony Orchestra. *Bone*
- 101. Wind Symphony. *Bryan*
- 102. Marching Band. *Henry*
- 103. Jazz Ensemble. *Williams*
- 104. String Ensemble. *Staff*
- 110. Collegium Musicum. *Herlinger*
- 111. Opera Workshop. *Hanks*
- 112. Chapel Choir. *B. Smith*
- 113. Chorale. *B. Smith*

**Credit in Applied Music.** (Skill courses—credit not applicable to distributional requirements.)\* Credit for instruction in courses below 100 is granted on the basis of a half-course per semester for one hour of private instruction per week and a minimum of six hours practice weekly; or a half-course per year for one-half hour of private instruction, or one period of class study, and a minimum of six hours practice per week. An additional weekly class meeting for performance and criticism may be required by the instructor without additional credit. Credit for instruction in courses above 100 is granted on the basis of a half-course per year for one rehearsal period of instruction and a minimum of three hours practice per week.

**Fees.** Students are charged for all applied music media below 100. Fees are payable to the Burser's office upon notification from that office at the beginning of each semester as follows:

One ½ hour private lesson per week for one semester	\$60.00
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Two ½ hour private lessons per week or one 1-hour private lesson per week for one semester	\$120.00
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One 1-hour class lesson per week for one semester	\$35.00
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No charge is made for practice room facilities.

These fees are not refundable after the final drop/add day.

### DEPARTMENTAL MAJOR

**Prerequisites.** Music 7-8, 65X, 66X, 107-108, and one year of applied music study in instrument or voice. Any or all of these may be exempted through demonstration of proficiency by examination and/or audition.

**Major Requirements.** Music 115S, 116S, 156S, 157S, 158S, 159S, and one additional elective course in the department. Majors must complete two years of college-level study, or the equivalent, of a foreign language. The department recommends in order of preference: German, Latin, Italian, or French.

**Honors.** Students who are qualified (see section on honors in this bulletin) may undertake work leading to graduation with distinction in music by application to the Director of Undergraduate Studies. In addition to meeting the normal requirements of a major in the department, honors work usually involves participation in an appropriate senior seminar and/or independent study. It must culminate in a paper, historical or analytical, either full length by itself or somewhat more concise if offered in conjunction with a recital or composition. The paper must be approved by a faculty committee.

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\*Subject to instructor's approval, a student at an advanced level in applied music may take courses for tutorial and distributional requirements. These courses shall be designated by adding a *T* to the appropriate course number. Students who have not reached an advanced level will continue to take the regular applied music courses.

## Naval Science

For courses in Naval Science, see *Reserve Officers Training Program*.

## Philosophy

Professor Golding, *Chairman*; Professor Welsh, *Director of Undergraduate Studies*; Professors Mahoney, Peach, and Sanford; Associate Professor Roberts; Assistant Professors Fjeld, Ross, and Wartenberg

The undergraduate program in the Department of Philosophy is designed to acquaint the students with the content and the structure of philosophical theory in various areas. Discussion is encouraged so that the student can engage actively in the philosophical examination of problems.

Course offerings fall into two general categories: the systematic and the historical. In a systematic treatment, the organization of a course is primarily in terms of the problems presented by the subject matter of that course, as in logic, ethics, and metaphysics. In historical courses, attention is directed more to the order of development in the thought of a particular philosopher (Plato, Aristotle, Kant), or in a historical period. In all courses, reading of the works of philosophers will acquaint the students with the important and influential contributions to the definition and solution of philosophical issues.

The problems raised in philosophy in respect to the various fields of the arts and sciences involve questions which are not normally given attention in those particular disciplines. In the consideration of such problems, therefore, it is expected that the student will acquire some understanding and perspective of the major areas of man's intellectual endeavor. In this sense, philosophical comprehension is an essential part of a student's learning and education.

Philosophy provides a sound preparation for the demands of many professions. For example, the precision of argument and broad acquaintance with intellectual traditions emphasized in philosophy form an excellent basis for the study of law.

Only one course (Philosophy 41, 42, 43S, or 44S) may be taken for credit. These courses are not open to juniors and seniors.

**41. Introduction to Philosophy.** Examination of problems in philosophy; emphasis on metaphysics and theory of knowledge. One course. *Staff*

**42. Introduction to Philosophy.** Examination of problems in philosophy; emphasis on ethics and value theory. One course. *Staff*

**43S. Introduction to Philosophy.** Philosophy 41 conducted as a seminar. One course. *Staff*

**44S. Introduction to Philosophy.** Philosophy 42 conducted as a seminar. One course. *Staff*

**48. Logic.** A study of the conditions of effective thinking and clear communication. Examination of the basic principles of deductive reasoning. One course. *Ross or Sanford*

**93. History of Ancient Philosophy.** The pre-Socratics, Socrates, Plato, Aristotle, and post-Aristotelian systems. Freshman prerequisites: previous philosophy course and consent of the instructor. One course. *Mahoney or Fjeld*

**94. History of Modern Philosophy.** Bacon, Hobbes, Descartes, Spinoza, Leibnitz, Locke, Berkeley, Hume, and Kant. Freshman prerequisites: previous philosophy course and consent of instructor. One course. *Peach or Wartenberg*

**101. Philosophy of Religion.** Selected concepts and doctrines. One course.

*Roberts*

**102. Aesthetics: The Philosophy of Art.** The concept of beauty, the work of art, the function of art, art and society, the analysis of a work of art, criticism in the arts. One course. *Welsh*

**103. Symbolic Logic.** Detailed analysis of deduction and of deductive systems. Open to sophomores by consent of instructor. (Also listed under Linguistics.) One course. *Ross*

**104. Philosophy of Science.** The principal philosophical and methodological problems in contemporary science. One course. *Ross*

**105. Philosophy of History.** History as a form of inquiry; problems of explanation; objectivity and the historical individual; general interpretations of the historical process. One course. *Roberts*

**106. Philosophy of Law.** Natural law theory; legal positivism; legal realism; the relation of law and morality. One course. *Golding or Roberts*

**107. Political and Social Philosophy.** Discussion of the fundamental principles of political and social organizations. One course. *Mahoney*

**108. Social Ideals and Utopias.** Reading of selected Utopias; analysis of the value structures and political principles of these ideal societies. One course. *Wartenberg*

**109. Philosophy of Language.** A philosophical analysis of problems arising in the study of language and symbolism. Topics include: theories of language, the nature of signs and symbols, theories of meaning, types of discourse (scientific, mathematical, poetic), definition, ambiguity, metaphor. (Also listed under Linguistics.) One course. *Fjeld or Welsh*

**110. Epistemology.** A treatment of the problems of truth and knowledge; of *a priori* and empirical statements; and of theories of perception and probability. One course. *Roberts or Sanford*

**111. Metaphysics.** A selection from the following: theories of substance, universals, identity, space, time, and causality; determinism and action; the relation of mind and body. Prerequisite: one course in philosophy. One course. *Sanford*

**112. Philosophy of Mind.** Such topics as mind and body, thought, perception, persons, and personal identity. One course. *Roberts, Sanford, or Welsh*

**116. Systematic Ethics.** Problems in moral philosophy: the nature of morality, ethical relativism, egoism, utilitarianism. Both historical and contemporary readings, with emphasis on the latter. One course. *Golding*

**117. Ancient and Modern Ethical Theories.** The development of ethical thought in the West; the interaction between culture and ethical theory, with special reference to the Greek city-state, Roman law, the Renaissance, the Reformation, and the rise of modern science. Readings in the great ethical philosophers. One course. *Welsh*

**118. Philosophical Issues in Medical Ethics.** Ethical issues arising in connection with medical practice and research and medical technology. Definition of health and illness; experimentation and consent; genetic counseling and biological engineering; abortion, contraception, and sterilization; death and dying, codes of professional conduct; and the allocation of scarce medical resources. Prerequisite



for freshmen: previous philosophy course and consent of instructor. One course. *Golding, Roberts, or Sanford*

**119. Medieval Philosophy.** Readings and discussion of Christian, Islamic, and Jewish philosophy from late antiquity to 1300. Special emphasis on the nature and destiny of man, human knowledge and conduct, and the question of the existence and nature of God. (Also listed under Medieval and Renaissance Studies.) One course. *Mahoney*

**120. Late Medieval and Renaissance Philosophy.** Critical trends in fourteenth-century philosophy; Renaissance Platonism, humanism and theories of love; Aristotelianism and the immortality controversy; the rebirth of skepticism; and the rise of modern philosophy. (Also listed under Medieval and Renaissance Studies.) One course. *Mahoney*

**132. Nineteenth-Century Philosophy.** Emphasis on Hegel, Marx, and Nietzsche. One course. *Wartenberg*

**134. Existentialism.** One or more major texts, such as Sartre's *Being and Nothingness*. One course. *Roberts*

**135. Philosophy in Literature.** Comparative examination of philosophical topics such as freedom, responsibility, good and evil, time and reality. One course. *Roberts*

**166–167. Ethics and the Professions.** Classical and contemporary ethical theories and secular and Judaeo-Christian moral traditions as contexts for considering the ethical problems of the professions. Lectures accompanied by discussions of particular professions, e.g., law, medicine, engineering, and business. To be taken concurrently. (Also listed as Religion 166–167.) Two courses. *McCollough and Roberts*

**191, 192, 193, 194. Independent Study.** Directed reading and research. Open only to highly qualified students in the junior and senior year, with consent of the department. *Staff*

**196S, 197S, 198S, 199S. Seminars in Philosophy.** Prerequisite: one course in philosophy or permission of the instructor. One course each. *Staff*

### For Seniors and Graduates

**202S. Aesthetics: The Philosophy of Art.** A study of some fundamental issues in aesthetics with particular reference to the fields of literature, music, and painting. Problems discussed include the role of standards in criticism, aesthetic judgment, interpretation, evaluation in the arts, meaning in the arts, art and truth, the arts and morality. Open to juniors with the consent of the instructor. One course. *Welsh*

**203S. Contemporary Ethical Theories.** Study of the nature and justification of basic ethical concepts in the light of the chief ethical theories of twentieth-century British and American philosophers. One course. *Roberts*

**204S. Philosophy of Law.** Natural law theory and positivism; the idea of obligation (legal, political, social, moral); and the relation of law and morality. One course. *Golding*

**205S. Philosophy of History.** The nature of historical knowledge and inquiry; theories of the historical process. One course. *Staff*

- 206S. Responsibility.** Investigation of the relationship between responsibility in the law and moral blameworthiness; excuses and defenses; the roles of such concepts as act, intention, motive, ignorance, and causation. One course. *Golding*
- 208S. Political Values.** Analysis of the systematic justification of political principles and the political values in the administration of law. One course. *Golding*
- 211S. Plato.** Selected dialogues. One course. *Fjeld*
- 217S. Aristotle.** Metaphysics or the Nicomachean Ethics. One course. *Fjeld*
- 218S. Medieval Philosophy.** Selected problems in medieval philosophy. (Also listed under Medieval and Renaissance Studies.) One course. *Mahoney*
- 225S. British Empiricism.** A critical study of the writings of Locke, Berkeley, or Hume with special emphasis on problems in the theory of knowledge. One course. *Peach*
- 227S. Continental Rationalism.** A critical study of the writings of Descartes, Spinoza, or Leibniz with special emphasis on problems in the theory of knowledge and metaphysics. One course. *Peach*
- 228S. Recent and Contemporary Philosophy.** A critical study of some contemporary movements in philosophy with special emphasis on the work of Moore, Russell, Wittgenstein, Wisdom, and Ryle. One course. *Wartenberg or Welsh*
- 231S. Kant's Critique of Pure Reason.** One course. *Wartenberg*
- 232S. Recent Continental Philosophy.** Selected topics. One course. *Wartenberg*
- 233S. Methodology of the Empirical Sciences.** Recent philosophical discussion of the concept of a scientific explanation, the nature of laws, theory and observation, probability and induction, and other topics. Prerequisite: consent of the instructor. One course. *Ross*
- 234S. Problems in the Philosophy of Science.** Selected problems in the physical and nonphysical sciences such as space and time, measurement and determinism. Prerequisite: consent of instructor. One course. *Ross*
- 241S. Topics in Logical Theory.** One course. *Staff*.
- 251S. Epistemology.** Selected topics in the theory of knowledge, e.g., conditions of knowledge, scepticism, and certainty, perception, memory, knowledge of other minds, and knowledge of necessary truths. One course. *Sanford*
- 252S. Metaphysics.** Selected topics: substance, qualities and universals, identity, space, time, causation, and determinism. One course. *Sanford*
- 253S. Philosophy of Mind.** Analysis of concepts such as thought and belief; issues such as mind-body relations, thought and action, the nature of persons and personal identity. One course. *Roberts*
- 254S. Philosophy of Religion.** Topics such as proofs of the existence of God, meaningfulness of religious language, the problems of evil, immortality, and resurrection. One course. *Roberts*
- 255S. Philosophy of Action.** Problems in the individuation, characterization, and explanation of human actions; an analysis of such concepts as choosing, deciding, intending, doing, making, letting. One course. *Sanford*
- 260S. Wittgenstein.** An examination of the *Tractatus* or the *Investigations*. One course. *Welsh*

**287, 288. Foundations of Mathematics.** See description for Mathematics 287, 288. (Also listed as Mathematics 287, 288.) One course. *Shoenfield*

**291S, 292S. Special Fields of Philosophy.** One course. *Graduate staff*

## DEPARTMENTAL MAJOR

*Major Requirements.* Eight semester-courses in philosophy of which at least six must be in courses numbered above 48. The following must be included: Philosophy 93 and 94; one nonintroductory course in theory of value. Philosophy 48 is recommended, though not required.

*Related Work.* Two courses minimum in each of two departments approved by the philosophy adviser. Courses may not be those primarily open to freshmen. There is no restriction in principle as to departments in which related work may be taken, and the approval of the philosophy adviser is required only to insure some coherence in the program of major and related work as a whole.

The department offers work leading to graduation with distinction. See the section on honors.

## Physics

Professor Walker, *Chairman*; Professor Han, *Director of Undergraduate Studies*; Professor Fairbank, *Coordinator of General Physics*; Professors Biedenharn, Bilpuch, Cusson, Gordy, Lewis, Meyer, Roberson, Robinson, and Walter; Associate Professors De Lucia, Evans, Fortney, Goshaw, and Weller; Assistant Professors Kolena, Lawson, Lucas, Nelson, Palmer, Smith, and Wender; Instructors Byrd, Clark, and Schweizer

Physics courses aim to develop in students a knowledge of the fundamental concepts of physics and the analytical skills necessary for scientific work. The undergraduate program provides students with appropriate academic background for positions in industry, government laboratories, or for graduate study. A program is also available which prepares students for the study of medicine while giving them a strong background in physics.

**32. History of Physics.** Theories including Newtonian Mechanics, atomic structure, quantum theory, relativity, nuclear and particle physics; their developers and technological applications. No previous knowledge of physics assumed. One course. *Walker or Palmer*

**33. Energy: Principles, Problems, Alternatives.** Basic principles of physics as related to energy, the energy crisis, possible sources and alternatives. Conservation, and environmental aspects of energy consumption. Optional special topics laboratory. No previous knowledge of physics assumed. One course. *Robinson*

**36. Acoustics and Music.** Physical principles underlying musical instruments, room acoustics, and the human ear. Analysis, reproduction, and synthesis of musical sounds. No previous knowledge of physics is necessary. (Also listed as Music 36.) One course. *Lawson*

**41, 42. Fundamentals of Physics.** For students interested in majoring in physics; taken in the freshman year. Basic principles of physics, mainly classical, at a level similar to Physics 51-52, but with emphasis on laying a foundation for further study. Three lecture-recitations and one three-hour laboratory. Closed to students having credit for Physics 51, 52. Prerequisites: approval of the Director of Undergraduate Studies; Mathematics 31, 32 or equivalent (may be taken concurrently). Two courses. *Lewis or Goshaw*

**51, 52. General Physics.** Basic principles of general physics treated quantitatively. Designed for students entering medicine, engineering, and the sciences. Not

open for credit to students who have completed Physics 41, 42. Students planning to major in physics should enroll in Physics 41, 42 in their freshman year. Prerequisites: Mathematics 31, 32 or equivalent (may be taken concurrently with consent of instructor). Two courses. *Bilpuch, Cusson, Fairbank, Fortney, Goshaw, Lucas, Nelson, Roberson, Schweizer, Walter, or Wender*

**51P, 52P. Preceptorials.** Elective preceptorials for students enrolled in Physics 51, 52.

**55. Introduction to Astronomy.** Man's evolving theory of the physical universe. Cosmological models, galaxies, stars, interstellar matter, the solar system, and experimental techniques and results. Several observatory sessions per semester. One course. *De Lucia or Kolena*

**102. Applications of Modern Physics in Medicine.** Recent applications of physical phenomena in medical investigations including lasers, ultrasonics, X-rays, radioactivity, radiation therapy, cryogenics, and electronic techniques. Prerequisites: Physics 41, 42 or 51, 52. One course. *Walter*

**105. Introduction to Astrophysics.** Basic principles of astronomy treated quantitatively. Cosmological models, galaxies, stars, interstellar matter, the solar system, and experimental techniques and results. Prerequisite: Mathematics 31 and Physics 51–52, or consent of the instructor. One course. *De Lucia*

**106. Topics in Astrophysics.** Current topics with emphasis on contributions of the basic sciences. Experimental and observational opportunities. Prerequisite: Physics 55 (or 105) or consent of instructor. One course. *De Lucia*

**161. Modern Physics.** Relativity, quantum phenomena, atomic and molecular structure and spectra, solids, statistical physics, nuclear physics, elementary particles. Prerequisites: Physics 41, 42 or 51, 52 and Mathematics 32. Two courses. *Evans or Han*

**171. Electronics.** Elements of electronics including circuits, transfer functions, solid state devices, transistor circuits, operational amplifier applications, digital circuits and computer interfaces. Three lectures and one three-hour laboratory. Prerequisites: Physics 41, 42 or 51, 52. One course. *Fortney*

**176S. Thermodynamics and Kinetic Theory.** Thermodynamics, kinetic theory, and elementary statistical mechanics. Prerequisites: Physics 41, 42 or 51, 52 and differential and integral calculus. One course. *Meyer*

**181. Introductory Mechanics.** Newtonian mechanics at the intermediate level, Lagrangian mechanics, linear oscillations, special relativity. Prerequisites: Physics 41, 42 or 51, 52 and differential and integral calculus. One course. *Han or Weller*

**185. Optics and Spectroscopy.** Wave motion, Fourier methods, geometrical and physical optics, coherence, lasers, and atomic and molecular spectra. Prerequisites: Physics 41, 42, or 51, 52, and differential and integral calculus. One course. *Staff*

## For Seniors and Graduates

**211, 212. Advanced Modern Physics.** Quantum theory with applications to the study of atoms, molecules, solids, and nuclei. Prerequisites: Physics 161, 181 or equivalents; Mathematics 285–286 or equivalent (may be taken concurrently). Two courses. *Robinson*

**215. Introduction to Quantum Mechanics.** Wave mechanics and elementary applications; the hydrogen-like atoms; electron spin and angular momentum;



operators and eigenvalues; stationary state perturbation theory; identical particles. Prerequisites: Physics 161 and 181 and Mathematics 285-286 (may be taken concurrently.) One course. *Biedenharn*

**217S, 218S. Advanced Physics Laboratory and Seminar.** Experiments involving the fields of mechanics, electricity, magnetism, heat, optics, and modern physics. Two courses. *Meyer*

**220. Electronics.** Basic elements of modern electronics including a.c. circuits, transfer functions, solid state service, transistor circuits, operational amplifier applications, digital circuits, and computer interfaces. One course. *Fortney*

**223. Electricity and Magnetism.** Electrostatic fields and potentials, boundary value problems, magnetic induction, energy in electromagnetic fields, Maxwell's equations, introduction to electromagnetic radiation. One course. *Cusson or Smith*

**225, 226. Elementary Investigations.** Training in the laboratory and library methods of physical research. Qualified students may conduct elementary investigations under the supervision of a member of the staff. Two courses. *Staff*

**231. Masers and Lasers.** Theory and applications of quantum electronic devices operating in the spectral range from radiowaves to visible light. Prerequisite: Physics 161. One course. *Gordy*

**240. Computer Application to Physical Measurement.** Discussion and application of various computer interfacing techniques for data acquisition, display, and control in the modern experimental arrangement. Experience with a laboratory computer. Prerequisites: Physics 171 or consent of instructor. One course. *Fortney*

**280. Nuclear Reactor Physics.** Neutron diffusion theory, reactor criticality, kinetics, control, and reactivity effects. Slowing-down of neutrons, age theory, resonance absorption, temperature effects, and multigroup methods. Prerequisites: Physics 161; Mathematics 285-286 or equivalent (may be taken concurrently). One course. *Staff*

**282. Mechanics of Continuous Media.** Small vibrations, rigid body motion, hydrodynamics, elasticity. Prerequisites: Physics 41-42 or 51-52 and differential and integral calculus. One course. *Walker*

## DEPARTMENTAL MAJOR

Students planning to major in physics should enroll in Physics 41, 42 in their freshman year. They should also arrange to complete the necessary mathematics as soon as possible.

### The A.B. Degree

*Prerequisites.* Physics 41, 42 or 51, 52 or equivalent; Mathematics 31, 32 or equivalent, 103, 104, and 131; two courses in another natural science.

*Major Requirements.* At least six semester-courses in physics from the available 100- and 200-level courses. Of these at least one course must be a laboratory course. A physics major also normally takes two courses of related work beyond the introductory level, in a program approved by the physics adviser.

### The B.S. Degree

*Prerequisites.* Physics 41, 42 or 51, 52 or equivalent; Mathematics 31, 32 or equivalent, 103, 104, and 131; two courses in another natural science.

*Major Requirements.* At least eight semester-courses in physics at the 100- and 200-level. These courses are normally Physics 161, 171, 181, 176, 211, 212, 218, and 223. Students planning graduate study are urged to take two or more electives in physics. B.S. physics majors also take two courses of related work beyond the introductory level, in programs approved by their physics adviser.

The department offers to the student in the senior year the possibility of being associated with research conducted in this department. Such work may lead to graduation with distinction. See the section on honors.

## Political Science

Professor Holsti, *Chairman*; Associate Professor Eldridge, *Director of Undergraduate Studies*; Professors Barber, Braibanti, Cleaveland, Grzybowski, Hall, Hallowell, Hough, Kornberg, and Leach; Adjunct Professor Choudhury; Associate Professors Fish, Hawley, Johns, O'Barr, Paletz, Price, Rogowski, Salamon, Spragens, and Valenzuela; Assistant Professors Falcone, Kruzel, and McKean

Courses in political science for undergraduates are offered in four fields: (1) American government, politics, and public administration; (2) comparative government and politics; (3) political theory and methodology; and (4) international law, relations, and politics. In each field, a basic course (numbered at the 90-level) serves as an introduction both to the study of political science and to the subject matter and approaches of the field, and middle and upper-level courses and seminars (numbered at the 100- and 200-levels respectively) consider particular aspects and topics within the field. In addition, opportunities for independent study under faculty supervision enable students to explore topics of special interest. Students majoring in political science are required to complete at least one course in each of three fields noted above. See below for listing of courses by fields, as well as requirements of the major. See appropriate subsections below for information concerning seminars, independent study, internships, and honors.

### INTRODUCTORY COURSES

Each of the following courses provides an introduction to the study of political science and serves as the basic course in one of the four fields of the discipline. Students ordinarily will take at least one of these courses before proceeding to more advanced courses. Some advanced courses may require a particular introductory course as a prerequisite to admission.

**91. The American Political System.** Theory and practice of American government and politics, federal-state relations, the separation and interrelationships of the executive, legislative, and judicial branches of government, judicial review, the role of political parties and public opinion, the formulation and execution of domestic and foreign policy, civil liberties. One course. *Staff*

**91D. The American Political System.** Same as Political Science 91 except instruction is provided in two lectures and one small discussion meeting each week. One course. *Staff*

**92. Comparative Politics.** Topics include problems of conceptualization and analysis; foundation of politics under democratic, authoritarian, and totalitarian regimes; theories of development and underdevelopment; revolution and collective violence; the role of elite, such as the military. One course. *Staff*

**93. Elements of International Relations.** The nature of international politics, the analysis of national power, the instruments of foreign policy, and the controls of state behavior. One course. *Eldridge or Kruzel*

**94. Contemporary Political Ideologies.** Liberalism, socialism, Marxism and its variants, fascism, contemporary democratic theory. One course. *Hallowell or Spragens*

## OTHER UNDERGRADUATE COURSES

**100. Politics of Liberties.** Theory and development of the Bill of Rights with attention to Supreme Court decisions and to cultural and political forces. One course. *Fish*

**101, 102. Introduction to the Civilizations of Southern Asia.** (Also listed as Interdisciplinary Course 101, 102.) One course. *Staff*

**103. Comparative Fascism and Totalitarianism.** Modern fascism in comparative and historical perspective; particular attention to German National Socialism. One course. *Rogowski*

**104. Revolution, Mass Violence, and Social Change.** Major historical and contemporary cases of revolution, guerilla warfare, and collective violence. Comparison of cultural, Marxist, rational-choice, and other theories of revolutionary phenomena. One course. *Eldridge, Rogowski, or Valenzuela*

**105. The Black American in Politics.** Behavior of Black people in the American political system, with special attention to voting organizations and the Black power movement. One course. *Staff*

**107. Comparative Environmental Policies.** Comparative analysis of environmental problems and policies in politically diverse industrialized nations including the United States, Russia, and Japan. (Also listed as Public Policy Studies 107.) One course. *McKean*

**108. The American Presidency.** The presidency and its impact on the American political system. One course. *Paletz*

**109. State and Local Government Today.** Problems in state, county, and city government. One course. *Leach*

**110. The Canadian Polity.** The Canadian political system from a behavioral perspective; relationships of the political culture, individual political behavior, and political institutions; with particular attention to distinctive regional, ethnic, and religious subcultures. One course. *Staff*

**111. Contemporary Japanese Politics.** Introduction to political change in postwar Japan. Foundations of the modern industrial state, electoral politics, policy-making and bureaucracy, defense, foreign policy, and foreign trade. One course. *McKean*

**115, 116. Introduction to Islamic Civilization.** (Also listed as Interdisciplinary Course 162, 163.) Two courses. *Braibanti, Lawrence, and staff*

**117. Comparative Legal Systems.** Origins, development, and mutual influences of modern legal systems: Roman and civil law; the Common Law and the Anglo-Saxon tradition; Islamic law; communist legal systems and the legal systems of Black Africa. One course. *Grzybowski*

**118. American Constitutional Development.** Prerequisite: Political Science 91 or 91D or consent of instructor. One course. *Fish*

**119. Governance and Administration of Education.** Agencies and officials of government affecting the making of educational policy in the United States and of the administration of that policy in practice. (Also listed as Education 119.) One course. *Hall, Leach, and Pittillo*

**120. International Conflict and Violence.** Nature and processes of international conflict and violence with emphasis on contemporary instances of violence in international affairs. Consideration of restraints on violence. One course. *Eldridge*

**122. Modern International Politics.** An examination of the major problems in contemporary international affairs with attention to superpower politics, specific regional concerns, and the problems associated with the emergence of a new international economic order. One course. *Eldridge or Kruzel*

**123. Introduction to Political Philosophy.** The nature and enduring problems of political philosophy, illustrated by selected theorists in the Western political tradition. One course. *Hallowell or Spragens*

**124D. The Political Novel.** Politics and political concepts (totalitarianism, utopianism, fascism, nihilism, obligation and rights,) as portrayed in the novels of Silone, Koestler, Orwell, Dostoevsky, and others. One course. *Staff*

**125. American Political Parties and Practical Politics.** A study of the historical development, organization, and methods of political parties in the United States. One course. *Kornberg*

**126. Democratic Theory and Political Reality.** Normative goals and empirical analysis of existing democratic states. One course. *Spragens*

**127. Law and Politics.** Nature and functions of law; Anglo-American legal institutions, the process of judicial decision making, and the relationships among judges, lawyers, legislators, and administrators in the development of public as well as private law. One course. *Fish*

**128. Congress and the Presidency.** Policy making in the executive and legislative branches of the United States government, with particular attention to intragovernmental relations. One course. *Price*

**129. Groups in American Politics.** Theory and practice of the interest group approach to the study of American politics. One course. *Paletz*

**131. Introduction to American Political Thought.** Basic elements in the American political tradition as developed from its English roots to the present. One course. *Leach*

**135. Comparative Legislative Behavior.** Structures, processes, functions, and behavior of legislatures, and legislative-like institutions in a variety of Western and non-Western societies with emphasis on the role of legislatures in policy formation, national integration, and modernization/development. One course. *Staff*

**136. Comparative Government and Politics: Western Europe.** Modern political institutions and processes of Britain, France, Germany, and at least one of the smaller European democracies. Political consequences of divergent patterns of social and economic modernization; regional, religious, and class divisions; the modern role of parliaments; authoritarian, democratic, and pluralist alternatives in contemporary European societies. One course. *Rogowski*

**137. Political Behavior in Elections.** Political participation; public opinion; voting behavior, sociological and psychological bases, comparative studies, models, and methodology of research. One course. *Staff*

**138. Quantitative Analysis of Politics.** Basic applications of statistical tools of analysis of political phenomena. Emphasis on statistical inference. No prerequisites. (Not open to students who have had or are enrolled in Political Science 236,



Psychology 117, Mathematics 53 or 183, Management Sciences 110, or Economics 138.) One course. *Holsti*

**139. Bureaucracy and Public Policy.** Analysis of the role of American bureaucracy in the making and execution of public policy. One course. *Hall*

**140. Administrative Law and Government.** Fundamentals of the American system of law and government as reflected in the administrative process. One course. *Hall*

**141. Public Administration.** An introduction to the role of administration in the governmental process considering principles of administrative organization, methods of administrative control, personnel, and fiscal management. In general the study of the organizational and administrative problems encountered by any government agency charged with carrying out public policy. One course. *Cleveland or Hall*

**144. American Political Thought Since the Gilded Age.** The Progressive Period and the recurring themes of contemporary debate. Attempts to refurbish or develop alternatives to the dominant "liberal tradition." The ideological roots of Black, feminist, and "conservative" protest. One course. *Price*

**145. Political Analysis for Public Policy Making.** (Also listed as Public Policy Studies 114.) One course. *Blaydon, Hawley, or Salamon*

**146. American Legislative Behavior.** Structure and operation of the legislative system, with emphasis on background, attitudes and role perceptions, and decision-making behavior of national and state legislators. One course. *Staff*

**147S. Statutory Regulation of Political Activity.** The law of political activity, including such topics as campaign finance reform, lobbying, political influence in administrative decision making, requirements for voting and candidacy, unethical practices in campaigns and office-holding, and political trials. One course. *Fleishman*

**148. Political Development of the Arab World.** Development in the context of wealth rather than poverty. Political, social, and economic problems of petroleum-rich countries of the Arabian peninsula, nature of OPEC, impact of modernization on Islamic civilization. One course. *Braibanti*

**149. United States and East Asia.** American military intervention in China, Korea, and Vietnam; contemporary United States relations with Japan, China, and other Asian nations; new trends and sources of tension in East Asia and the Pacific. One course. *McKean*

**151. Introduction to Latin American Politics.** Historical and cultural context of political institutions and behavior; the role of traditional and emerging groups and forces; political instability and the decision-making process. One course. *Valenzuela*

**152. Authoritarianism and Revolution in Latin America.** Analysis of the politics of major countries including Argentina, Brazil, Chile, Cuba, and Mexico. One course. *Valenzuela*

**153, 154. Politics and the Media of Mass Communication.** Analysis of the nature, organization, and activities of the mass media as they affect the American political system, processes, and members. Governmental impact on the mass media. It is desirable but not required that students taking 153 continue with 154. With consent of the instructor, students who have not taken 153 may enroll in 154. Two courses. *Paletz*

**155. Problems of Political Development in the New States.** Survey of change and modernization in Africa and Asia; nationalism and neutralism, role of political parties, the military, and the bureaucracy in nation-building; economic growth and foreign aid. One course. *Braibanti*

**156. The Changing Roles of Men and Women: Two-Career Families.** (Also listed as Interdisciplinary Course 156 and Sociology 156.) One course. *McGee and J. O'Barr*

**157. Foreign Policy of the United States.** Sources of American foreign policy, containment, international economic policy, deterrence, arms control and disarmament. Prospects in the post-Vietnam era. Emphasis on the period since World War II. One course. *Holsti*

**158. Foreign Policy Decision Making in the United States.** Individual, group, and organizational aspects. Emphasis on the period since World War II. One course. *Holsti*

**161. Comparative Government and Politics: Africa.** Nationalism, nation-building, and problems of development in sub-Saharan Africa. One course. *Johns*

**162. Comparative Government and Politics: Communist and Socialist Political Systems.** Communist and socialist movements in Europe, Asia, and the Third World; emphasis on party structure and ideology. One course. *Johns*

**163. Women in Developing Societies.** Comparative analysis of factors related to the political power of Third World women in precolonial, colonial, and contemporary times. One course. *O'Barr*

**165. Government and Politics of the Soviet Union.** Analysis of the Soviet political system, emphasizing the sources of stability and instability and the responsiveness of its policies. Literature on the non-Soviet world (notably the United States) will be included. One course. *Hough*

**166. Soviet Foreign Relations.** Nature of relations with other states. Determinants and formulation of foreign policy. One course. *Hough*

**168. Nationalism and Political Change in East Asia.** Divergent responses to the Western impact on Japan and China: political reform, industrialization and liberalization. Ultrnationalism and militarism in Japan compared with rebellion, decay, republican experiment, and communist revolution in China. One course. *McKean*

**169. Politics in Revolutionary China.** Political process in China since 1949, with emphasis on ideological shifts in the Cultural Revolution and the post-Mao era. Party politics, leadership, economic organization, thought reform, mass mobilization, and socialist transformation. China as an emerging world power. One course. *McKean*

**170S. The Legal Process and Social Change.** The role of the legal system in effecting and mediating social change. Consideration of different strategies and the circumstances in which they are effective. One course. *Fleishman*

**171. Race, Class, and Colonialism in Southern Africa.** Domination and opposition in the countries of southern Africa; political consequences of differing forms of colonialism, white settlement, nationalism, and industrialization. One course. *Johns*

**172. Political Economy of Global Natural Resources.** Analysis of selected national policies on food, energy, and minerals in an interdependent world economy; emphasis on the Third World. One course. *Johns*

**174. Political Biography.** Nature of politics as revealed in the life histories of individuals. Readings in single biographies and autobiographies, but with some comparative work. Students project their autobiographies toward possible political futures. One course. *Barber*

**175. Political Parties and Legislatures in Western Democracies.** The origin, maintenance, and functions of party and legislative systems in Western democratic societies. One course. *Kornberg*

**176. Urban Politics.** Urban political processes and their impact upon urban policy. One course. *Salamon*

**180. Comparative Government and Politics: Southern Asia I.** Concepts of political development in new states, using India, Pakistan, Sri Lanka, and Malaysia as case studies. Theory and practice of foreign aid and technical assistance as agents of political modernization. One course. *Braibanti*

**181. Comparative Government and Politics: Southern Asia II.** The political modernization of India and Pakistan since 1947. Constitutional developments as revealed in leading court judgments will be studied. Other topics will be the ideology of administrative reform, formulation of state policy, rural development, and party politics. One course. *Braibanti*

**184. Canada: Problems and Issues of an Advanced Industrial Society.** (Also listed as Interdisciplinary Course 184.) One course. *Preston and visiting lecturers*

**186. Political Leadership.** The development, characteristics, and impact of political leaders. Biographical and collective studies are considered primarily from a psychological perspective. One course. *Barber*

**187. Politics and the Libido.** Effects of the libido on elite and mass political activities. Government regulation of sex-inspired behavior. One course. *Paletz*

**188. The Psychology of Political Symbols.** The role of symbolic political issues in determining public attitudes and voting behavior. Symbolic political issues such as "law and order," pornography, and prohibition, distinguished from public welfare issues such as employment policies. One course. *McConahay*

**189, 190. Internship.** Open to enrollment by students engaging in practical or governmental work experience during the summer or a regular semester. To enroll, a student must obtain the approval of the Director of Undergraduate Studies, arrange employment, and secure the agreement of a faculty member in the department to supervise a program of study related to the work experience. Two courses.

**191, 192. Independent Study.** Directed reading and research. Open only to qualified juniors by consent of the Director of Undergraduate Studies and of the individual instructor. Two courses. *Staff*

**193, 194. Independent Study.** Directed reading and research. Open only to seniors by consent of the Director of Undergraduate Studies and of the individual instructor. Two courses. *Staff*

**195. Comparative Political Behavior in the United States and Canada.** Similarities and differences in political environments and their impact on political institutions and processes. One course. *Kornberg*

**197S. Principles and Methods of Political Inquiry.** Philosophical, scientific, and behavioralistic approaches to political problems; contemporary conceptual frameworks, including systems analysis and functionalism, group theory, and mathematical models. Prerequisite: consent of instructor. One course. *Staff*

**198. Senior Honors Seminar.** Open only to senior political science majors who are candidates for the degree with distinction. Preparation and writing of a research paper; group meetings to discuss common problems. Prerequisite: Political Science 197 or consent of the instructor. *Staff*

**200S. Senior Seminars.** One course each. *Staff*

- A. American Government and Politics
- B. Comparative Government and Politics
- C. Political Theory
- D. International Relations

### For Seniors and Graduates

**201. Arms Control and Defense Strategy.** Influences on national and international security. Prerequisite: one course in international relations or American foreign policy. One course. *Kruzel*

**204. Ethics in Political Life.** Ethical issues arising in the conduct of political vocations and activities. (Also listed as Public Policy Sciences 204.) One course. *Spragens*

**206. Politics and the Media.** The relationship between the media of mass communication and the American political process. Open to upperclassmen with consent of instructor. One course. *Paletz*

**207. American Constitutional Interpretation.** Development of the constitution of the United States through Supreme Court decisions. Prerequisite: Political Science 127. One course. *Fish*

**209. Problems in State Government and Politics.** One course. *Leach*

**210. The Politics of Education.** The forces in local, state, and national politics which impinge on educational policy making and administration. Not open to students who have had Political Science 313. (Also listed as Education 210.) One course. *Leach*

**211S. Current Problems and Issues in Japanese Politics.** Sources of strength and weakness in the Japanese economy, the rise of new issues and strains in postindustrial society, changes in the party system and decision-making process, the possible transfer of power, the challenge of Japan's new world role. One course. *McKean*

**212. Japanese Foreign Policy.** Transition from militarism to pacifism in Japan's international posture; the American alliance, rearmament and nuclear weapons, foreign trade and economic foreign policy, and energy and resource politics. One course. *McKean*

**215. Comparative Legislative Processes.** Analysis of the structures and functions of legislative institutions and of the behavior of legislative elites in both parliamentary and congressional systems. One course. *Staff*

**216S. Comparative Politics of the Welfare State.** Analysis of the political processes that shape very different solutions of similar social problems in advanced industrial nations. Examination of the development of income-maintenance programs and health care systems, with some discussion of other social policies. (Also listed as Public Policy Studies 216S.) One course. *Staff*



**217S. Economic Theories of Political Behavior.** Analysis of economic theories and other formal techniques applied to problems of voting behavior, legitimacy, and constitutional choice, and to strategies of political conflict and coalition. One course. *Rogowski*

**218S-219S. Political Thought in the United States.** Writings of leading political theorists. First semester: founding fathers and their European and Puritan antecedents; the abolitionists and Calhoun. Second semester: Progressive period and recurrent themes of contemporary protest and debate. (Offered in alternate years.) Two courses. *Price*

**220S. Problems in International Politics.** Prerequisite: one course on international relations, foreign policy, or diplomatic history. One course. *Holsti*

**221. International Organization.** The functioning of the United Nations system and of regional organizations operating in the political and security fields. One course. *Staff*

**222. Empirical Theory.** Critical examination of contemporary, nonnormative conceptual frameworks for political inquiry, with emphasis on the qualifications of these frameworks as theories. One course. *Staff*

**223. Political Philosophy from Plato to Machiavelli.** Intensive analysis of the political philosophies of Plato and Aristotle, a survey of medieval political thought and an analysis of the significance of Machiavelli. One course. *Hallowell*

**224. Modern Political Theory.** An historical survey and philosophical analysis of political theory from the beginning of the seventeenth to the middle of the nineteenth century. Attention is given to the rise of liberalism, the Age of Enlightenment, the romantic and conservative reaction, idealism, and utilitarianism. One course. *Hallowell*

**225. Comparative Government and Politics: Western Europe.** Rise of modern political parties; extension of the suffrage; entry of bourgeoisie, peasants, and workers into politics; center-periphery conflicts; emergence of the welfare state and of planned economies; problems of "collectivist" politics. One course. *Rogowski*

**226. Theories of International Relations.** Contemporary theories of international relations and foreign policy. Emphasis on the interdependence of theory and empirical research. One course. *Eldridge*

**227. International Law.** Elements of international law, particularly as interpreted and applied by the United States; rights and duties of states with respect to recognition, state territory and jurisdiction, nationality, diplomatic and consular relations, treaties, treatment of aliens, pacific settlement of disputes, international regulation of the use of force, and collective responsibility. One course. *Grzybowski*

**229. Recent and Contemporary Political Theory.** The rise of positivism and its impact upon modern political thought, the origins of socialism, Marxism and its variants, socialism in the Soviet Union, nationalism, fascism and national socialism, the crisis in modern democracy, Christianity and social order. One course. *Hallowell*

**230. American National Government.** Formation and contemporary operation of the national political system; historical and behavioral approaches. One course. *Staff*

**231. American Political Theory.** An analysis of the main currents in American political thought from colonial beginnings to the present day, with emphasis upon the development of liberalism in America. One course. *Leach*

**233. Research Methodology.** Measurement, causal analysis, and comparison of different levels of analysis, and other problems in political research. One course. *Staff*

**234S. Political Economy of Development: Theories of Change in the Third World.** Alternative approaches to political, economic, and social change in Latin America, Africa, and Asia. (Also listed as Anthropology 234S, History 234S, and Sociology 234S.) One course. *Bergquist, Pessar, Portes, Valenzuela, and Smith*

**235. The Commonwealth.** Analysis of political relationships among the members of the Commonwealth countries, with emphasis on Canada. One course. *Staff*

**236. Statistical Analysis.** Introduction to statistics in political research, emphasizing inferential statistics through simple regression and correlation. Not open to students who have had or are enrolled in Political Science 138, Psychology 117, Mathematics 53 or 183, Management Sciences 110, or Economics 138. One course. *Holsti*

**238. Comparative Foreign Policy.** An application of comparative theory to the foreign policy decision-making processes of major, middle range, and developing states. One course. *Eldridge*

**239S. Current Problems of International Law.** Theoretical trends, use of sources for research, role of international law in diplomacy and legal practice. For seniors and graduates only. One course. *Grzybowski*

**241. Public Administrative Organization and Management.** The American administrative process: theory and practice of administrative organization and management. One course. *Hall*

**243. Applications of Administrative and Organizational Theory.** Behavioral analysis of public organizations with emphasis on the impact of organizational structures, individual needs and motivation, and politics on the formulation and implementation of public policy. One course. *Hawley*

**244. Administrative Law and Process.** The nature and law of the administrative process in the context of American government and politics, with special attention to the powers, procedures, and judicial control of administrative agencies. One course. *Hall*

**245S. Ethics and Policy Making.** (Also listed as Public Policy Sciences 223S.) One course. *Price*

**246. Administration and Public Policy.** The role of administration in the American policy process. One course. *Hall*

**247. Political Participation and Policy Outcomes.** Impact of citizen participation upon governmental decision making. Theoretical issues and empirical evidence (primarily American, but partly comparative). (Also listed as Public Policy Sciences 247.) One course. *Hough*

**248. The Politics of the Policy Process.** (Also listed as Public Policy Sciences 219.) One course. *McConahay and Blaydon*

**249. Comparative International Development and Technology Flow.** Analysis of social, political, and economic development in Third World countries. The internal problem of maintaining political systems and the external problem of adapting intermediate or appropriate technologies. One course. *Braibanti*

**250. Comparative Government and Politics: Southern Asia.** The political development of India and Pakistan. Contextual determinants of the political

systems. Political consequences of partition. National integration, constitutional, and institutional aspects of the political systems. Impact of foreign technical assistance. One course. *Braibanti*

**252. Comparative Political Behavior and Socialization.** Elites and mass publics in a variety of Western and non-Western societies including the United States; models of the political socialization process and their implications for democratic theory. One course. *Staff*

**253. Comparative Government and the Study of Latin America.** Current literature on major themes of Latin American politics. One course. *Valenzuela*

**257S, 258S. Modern East Asia. Introduction to Problems and Literature.** (Also listed as Interdisciplinary Course 257S, 258S.) Two courses. *McKean*

**260. The Tradition of Political Inquiry.** Past and present problems, goals, presuppositions, and methods. One course. *Spragens*

**273S. The American South as a "Developing Society."** The concept of modernization as a tool of social and political analysis, and its applicability in explaining the patterns of political and economic evolution in the American South. One course. *Salamon*

**274. Political Psychology.** Psychological theories on political attitudes and opinions ranging from those of Fechner, von Helmholtz, Thurstone, and Likert to the more recent work of Festinger, Bem, McGuire, Converse, Lane, and the functionalists. One course. *McConahay*

**275. The American Party System.** An intensive examination of selected facets of American national political parties, such as relationships between presidential and congressional politics, the politics of national conventions, recent foreign policy and party alignments, and the controversy over party government. One course. *Kornberg*

**277. Comparative Party Politics.** The impact of social and political systems on party structures, functions, ideologies, and leadership recruitment. Emphasis upon research techniques and objectives. One course. *Kornberg*

**278. Canadian Political Behavior in the North American Context.** Institutional processes and political behavior in Canadian and American societies. Impact of multipartyism, federalism, political and cultural particularism, and the elite structure. One course. *Kornberg*

**280. Comparative Government and Politics: Sub-Saharan Africa.** Politics and government in selected African states, with particular attention to the problems of decolonization and modernization in the postindependence period. One course. *Johns*

**282S. Seminar on Canada.** Counts for the major only with the approval of the director of undergraduate studies. See course description for Interdisciplinary Course 282S. (Also listed as Anthropology 282S, History 282S, Sociology 282S, and under Canadian Studies.) One course. *Staff and visitors*

**283S. Congressional Policy Making.** Lawmaking and oversight of the bureaucracy by the United States Congress. Committee roles, impact of the executive and other external forces. (Also listed as Public Policy Studies 283S.) One course. *Price*

**285. The Judicial Process.** A study of judicial decision making in the United States, with emphasis on the process of litigation, the recruitment of judges, the influences and limits on judicial decisions, and their impact within the political

system. Prerequisite: Political Science 127 or 207 or the equivalent. One course. *Fish*

**291. Problems of Urban Government.** One course. *Leach*

**293. Federalism.** Theoretical and operational aspects of federal systems of government, focusing on the United States and Canada. One course. *Leach*

## SEMINARS FOR UNDERGRADUATES

Each semester certain courses at both the 100- and 200-level are offered as seminars and are so designated in the Official Course Schedule by an S following the course number, e.g., 135S, 217S. In addition, senior seminars (200A, B, C, D) in each of the four fields of the discipline are offered each year, with preference in admission being given to senior political science majors.

## INDEPENDENT STUDY

Independent study, (191, 192, 193, 194), normally consisting of intensive reading and research and the preparation of a substantial written report or paper, permits the student to explore topics of special interest not covered by regular courses or seminars. Ordinarily undertaken in the junior and senior years following, or concurrent with, some course work in political science, independent study presupposes not only a special interest on the student's part in a particular topic, but also an ability and willingness to work rigorously and independently in the furtherance of that interest. Interested students may see the Director of Undergraduate Studies for further information.

## POLITICAL INTERNSHIPS

The department organizes an internship program each summer, primarily in Washington, D.C., for political science majors and interested nonmajors. Students participate by qualifying for a position obtained by the department or by acquiring their own relevant employment. Interns may or may not receive payment for their services; some qualify for financial aid through the University. Weekly sessions with guest speakers in Washington are arranged to supplement the interns' work experiences. Course credit can be obtained by enrolling in Political Science 189 or 190, and writing an analytical paper. Application forms are available in the department office (214 Perkins). Potential applicants should contact the Internship Director, Louise Walker, at any time but preferably early in the fall semester.

## HONORS IN POLITICAL SCIENCE

A special opportunity for qualified political science majors is the department's honors program, successful completion of which enables the participant to achieve graduation with distinction in political science. The central feature and requirement of the program is the honors thesis which the student prepares under faculty supervision. Participation in the program is open to political science majors who, by the spring semester of the junior year, show promise of achieving at least a *B* average in political science by the time of graduation and give evidence of interest in, and capacity for, the skillful research and writing required for the preparation of a thesis of high (at least *A-*) quality. Students taking part in this program ordinarily begin by enrolling in Political Science 197S in the spring semester of the junior year, although in exceptional cases alternative approaches are possible. In the fall semester of the senior year, while enrolled in Political Science 198, participating students undertake the research and writing required for the thesis which is then evaluated by a faculty committee early in the spring semester. For



further information, see the Director of the program or the Director of Undergraduate Studies.

## POLITICAL SCIENCE COURSES BY FIELDS

Political science courses for undergraduates are offered in four fields, as noted below; students majoring in the department must complete at least one course in each of three fields.

*American Government, Politics, and Public Administration.* Political Science 91, 91D, 100, 105, 108, 109, 118, 119, 125, 127, 128, 129, 137, 139, 140, 141, 145, 146, 147S, 153, 154, 156, 170S, 174, 176, 186, 187, 188, 189, 190, 191\*, 192\*, 193\*, 194\*, 198\*, 200S A, 206, 207, 209, 210, 230, 241, 243, 244, 246, 247, 248, 273S, 274, 275, 283S, 285, 291.

*Comparative Government and Politics.* Political Science 92, 101, 102, 103, 104, 107, 110, 111, 115, 116, 117, 135, 136, 148, 151, 152, 155, 161, 162, 163, 165, 166, 168, 169, 171, 172, 175, 180, 181, 184, 191\*, 192\*, 193\*, 194\*, 195, 198\*, 200S B, 211S, 215, 216S, 217S, 225, 234S, 235, 250, 252, 253, 257S, 258S, 277, 278, 280, 282S, 293.

*Political Theory and Methodology.* Political Science 94, 123, 124D, 126, 131, 138, 144, 191\*, 192\*, 193\*, 194\*, 197S, 198\*, 200S C, 204, 218S, 219S, 222, 223, 224, 229, 231, 233, 236, 245S, 249, 260.

*International Law, Relations and Politics.* Political Science 93, 104, 120, 122, 149, 157, 158, 166, 191\*, 192\*, 193\*, 194\*, 198\*, 200S D, 201, 212, 220S, 221, 226, 227, 238, 239S.

## DEPARTMENTAL MAJOR

*Requirements.* Eight courses in political science including (1) at least one course in each of three fields; (2) at least two courses at the 200-level; and (3) no more than three cross-listed courses originated outside the Department of Political Science. (Such cross-listed courses appear in the preceeding listing without descriptions.)

*Suggested Work in Related Disciplines.* Several courses in such disciplines as anthropology, economics, history, philosophy, psychology, public policy, religion, and sociology are desirable.

## Psychology

Professor Kimble, *Chairman*; Professor Wing, *Director of Undergraduate Studies*; Professors Alexander, Bevan, Borstelmann, Carson, Diamond, C. Erickson, R. Erickson, Guttman, Martin Lakin, Lockhead, H. Schiffman, Staddon, and M. Wallach; Adjunct Professor Campbell; Associate Professors Coie, Costanzo, Day, Hall, and McConahay; Assistant Professors Buckingham, Butzin, Casseday, Eckerman, Kremen, Levy, Roth, Rubin, and Wilson; Lecturers Boudewyns, Brodie, H. Crovitz, Gentry, Goz, Hilkey, Musia Lakin, Marsh, Nebes, Oppenheim, S. Schiffman, Somjen, Surwit, Thompson, L. Wallach, and Wolbarsht; Research Associates Cooper and J. M. Davis

Students taking their first course in psychology are expected to participate as subjects in three to six hours of psychological research. Individual students need fulfill this requirement only once.

**11. Introductory Psychology.** Biological bases of behavior, psychological development, cognitive psychology, personality, abnormal behavior, and social psychology. One course. *Staff*

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\*If subject matter is appropriate to the field.

**70S, 71S. Freshman Seminars.** Intensive experience through the study of one or two problems of special interest: does not fulfill departmental prerequisites. Prerequisite: consent of the Director of Undergraduate Studies. Half-course or one course each. *Staff*

**101. Learning and Adaptive Behavior.** Principles of instrumental learning in animals and man. Prerequisite: Psychology 11 or Biology 14 or Biology 11-12. One course. *Kimble or Staddon*

**102. Introduction to Sensation and Perception.** Principles of organization of perceptual systems, including sensory systems (vision, audition, proprioception, and chemical senses); pattern recognition; perceptual anomalies; attention; methods of measurement. Prerequisite: Psychology 11. One course. *Buckingham, Lockhead, or Rubin*

**103. Biological Basis of Behavior.** Behavior as a product of evolution and the role of behavior in species survival. Neural and endocrine factors in reproduction, hunger, thirst, emotion, and intelligence. Heredity and environment in the development of behavior. Prerequisite: Psychology 11 or Biology 14 or Biology 11-12. One course. *Diamond or C. Erickson*

**104. Personality.** Representative theories of personality from Freud to the present, emphasizing problems of normal personality structure, dynamics, development, and assessment. Prerequisite: Psychology 11. One course. *Alexander, Carson, Martin Lakin, or H. Schiffman*

**105. Developmental Psychology.** Theory and research on growth and behavior from infancy to adolescence. Prerequisite: Psychology 11. One course. *Borstelmann, Butzin, Coie, Costanzo, or Eckerman*

**106. Social Psychology.** Problems, concepts, and methods in the study of social interaction and interpersonal influence. Prerequisite: Psychology 11. One course. *Levy or Wilson*

**107. Introduction to Cognitive Psychology.** An examination of cognition, including pattern recognition, concept formation, attention, memory, imagery, language, problem solving, and thinking. Emphasis is both empirical and theoretical. Prerequisite: Psychology 11. One course. *Day, Lockhead, or Rubin*

**108. The Psychology of Individual Differences.** Nature and causes of individual and group variations in intelligence, special abilities, social and emotional characteristics. Prerequisites: Psychology 11 and Psychology 117. One course. *Wing*

**109. Abnormal Psychology.** Disordered behavior and constructive personality change viewed in interpersonal and social context for purposes of understanding normal and abnormal personality development and functioning. Prerequisite: Psychology 11. One course. *Carson, Martin Lakin, or H. Schiffman*

**110. Applied Psychology.** Applications of psychology to problems of personnel selection, industrial efficiency, advertising, and selling. Prerequisite: one course in psychology. One course. *Staff*

**117. Statistical Methods in Psychology.** Elementary statistical techniques and their application to the analysis and interpretation of psychological data. Theory of inference is stressed. Psychology majors only. (Not open to students who have had Economics 138, Mathematics 53 or 183, or Management Sciences 110.) One course. *Staff*

**122S. Seminar in Child Observation.** Children are observed in the group setting of the University Preschool and Primary Program. Aspects of personality,

social development, and child-adult relationships. Open only to junior and senior psychology majors with consent of instructor. One course. *Musia Lakin*

**128. Systems of Psychology.** The main systems in psychology from the mid-nineteenth to mid-twentieth centuries; the introspectionist, functionalist, behaviorist, psychoanalytic, Gestalt, and structuralist positions; the work of Titchener, James, Dewey, Watson, Hull, Freud, Wertheimer, Kohler, and Piaget. Prerequisites: Psychology 102 or 103 and 104 or 105. One course. *Bevan, Guttman, or Kremen*

**129. Survey of the History of Psychology.** Landmarks in systematic psychology from early Greek science to the present. Prerequisites: Psychology 102 or 103 and 104 or 105. One course. *Bevan, Guttman, or Kremen*

**131. Visual Perception.** Structure and function of visual systems, perception of form and brightness, color vision, depth perception, adaptation, and perceptual development. Prerequisite: Psychology 102, 103 or consent of the instructor. One course. *Staff*

**133. Biological Aspects of Learning.** Evolution of learning abilities; specialized learning abilities; physiological mechanisms of learning. Prerequisite: Psychology 102 or 103. One course. *Staff*

**134. Psychology of Language.** Psychological "reality" of linguistic structures, language and cognition, biological bases, animal communication, language pathologies, nonverbal communication, language vs. music, linguistic universals, and bilingualism. Everyday language phenomena (e.g., slips of the tongue) as well as the experimental and theoretical literature. Prerequisite: Psychology 11. (Also listed under Linguistics.) One course. *Day*

**135. Hormones and Behavior.** The endocrine system and hormones in maternal, sexual, and emotional behavior. Prerequisite: Psychology 103. One course. *C. Erickson*

**136. Advanced Developmental Psychology.** Issues, concepts, and methods in psychological development, e.g., comparative social development, social cognition, adolescence. Prerequisite: Psychology 105 or consent of instructor. One course. *Borstelmann, Coie, Costanzo, or Eckerman*

**137. Physiological Basis of Perception.** Basic concepts and current theories on the neural mechanisms involved in the processing of sensory information. Prerequisite: Psychology 102 or 103. One course. *Buckingham*

**139. Motivation.** Contemporary use of such concepts as instinct, drive, and expectancy in the explanation of behavior; the role of nervous mechanisms and hormones in the control of goal-directed behavior. Prerequisite: Psychology 102 or 103. One course. *Guttman*

**Laboratory Courses (140 through 149).** These courses are open chiefly to juniors and seniors. The subject matter varies, but these courses have in common a concern with the design and execution of psychological experiments. Students will find them helpful as a means of gaining experience before engaging in independent study.

**140S. Research Methods in Child Psychology.** Prerequisite: Psychology 105. One course. *Coie, Eckerman, or L. Wallach*

**141S. Tests and Measurements.** Test methods used by psychologists to measure and evaluate mental processes. Prerequisite: Psychology 117 or the equivalent. One course. *Wing*

**142S. Instrumental Behavior.** Laboratory course using animal subjects in operant-conditioning situations. Prerequisite: Psychology 102. One course. *Guttman*

**143S. Experimental Methods in Cognitive Psychology.** Human cognition; language, memory, problem solving, and other higher mental processes. One course. *Staff*

**144S. Learning and Adaptive Behavior.** Basic principles of adaptive behavior in animals, with special emphasis on the effects of reinforcement. Participation in experiments with animals. Prerequisite: Psychology 102, 103, or consent of the instructor. One course. *Kimble*

**145S. Experimental Approaches to Personality.** Methods applied to personality research. Prerequisite: Psychology 104. One course. *Costanzo, Schiffman, or Wallach*

**146S. Experimental Comparative Psychology.** Animal behavior from evolutionary and physiological viewpoints. Emphasis on methodology. Prerequisite: Psychology 102 or 103. One course. *C. Erickson*

**147S. Experimental Social Psychology.** Group dynamics, attitude change, and interpersonal perception. Prerequisite: Psychology 106. One course. *Levy or Wilson*

**148S. Psychology of Perception and Thinking.** Basic phenomena of perception and thinking as determined by conditions in the external situation and in the person—biological and psychological. Prerequisite: Psychology 102. One course. *H. Crovitz or Lockhead*

**149S. Physiological Psychology Laboratory.** Neural bases of behavior, sensory and motor functions of the nervous system, and problems of emotion, motivation, and consciousness. Laboratory in psychophysics and the electrical activity of the nervous system. Prerequisite: consent of the instructor. One course. *R. Erickson*

**154S. Education, Children, and Poverty.** Psychological hypotheses concerning the roles of preschool intervention programs, improved quality of resources, teacher expectancy effects, and enhancement of pupil self-confidence, in relation to the goal of improved cognitive competence for poverty background children. Criteria for defining competence, such as scores on psychometric intelligence tests, performing on Piagetian tasks, and development of specific skills. Interpretations concerning intelligence and cognitive deprivation in poor children in the light of relevant psychological evidence. Prerequisite: one course in psychology or consent of instructor. One course. *M. Wallach*

**165S. Personality Theory.** Theories of personality from larger metatheoretical perspectives. Open to junior and senior majors in psychology or by consent of the instructor. Prerequisite: Psychology 104. One course. *Alexander or Kremen*

**170S. A-D. Seminar in Selected Problems.** One course each. *Staff*

**Tutorial Study.** For juniors and seniors. Small group discussions about influential books and articles in psychology. The availability of tutorials, their content, and their instructors will be announced before registration.

**171T, 172T. Junior Tutorial.** Prerequisites: Psychology 11 or two courses from Psychology 101 through 109, and Psychology 117 or the equivalent, and consent of the Director of Undergraduate Studies. Half-course or one course each semester. *Staff*



**173T, 174T. Senior Tutorial.** Prerequisites: Psychology 11 or two courses from Psychology 101 through 109, and Psychology 117 or the equivalent; and consent of the Director of Undergraduate Studies. Half-course or one course each semester. *Staff*

**177, 178. Independent Study and Research.** Prerequisites: formulation of a study plan with a faculty supervisor and approval of the Director of Undergraduate Studies; Psychology 11, and two courses from Psychology 101 through 109, and one psychology course numbered 140 through 149; Psychology 117 recommended. One or two courses each semester. *Staff*

**191, 192. Junior Honors Research.** Directed reading research. Open only to qualified juniors who expect to graduate with distinction in psychology. Prerequisite: consent of the Director of the Honors Program. One or two courses each semester. *Staff*

**193, 194. Senior Honors Research.** Directed reading and research for seniors planning to graduate with distinction in psychology. Prerequisite: consent of the Director of the Honors Program. One or two courses each semester. *Staff*

**199S. Psychology and the Political Experience.** An exploration of psychological variables related to political attitudes, the structure of political movements, styles of political movements, styles of political leadership, and the political behavior of the average citizen. Prerequisites: junior or senior standing. (Also listed as Distinguished Professor Course 194S.) One course. *Bevan*

#### **For Seniors and Graduates**

Courses at the 200-level are open to selected undergraduates only with written consent of the instructor.

**203. Sensation and Perception.** Examination of classical and current concepts and methods. One course. *Lockhead*

**210. Cognitive Psychology.** Theoretical and experimental approaches to understanding cognitive processes such as attention, memory, language, problem solving, and thinking. One course. *Day, Lockhead, or Rubin*

**211. Human Thinking.** Literature, classical and modern; data and theories relating to problem solving and decision making, analytical thought, and creative imagination. One course. *Bevan*

**212. Human Memory.** Literature, classical and modern; data and theories relating to mechanisms of information processing, storage, and retrieval. One course. *Bevan*

**213. Adaptive Behavior.** Principles of adaptive behavior in animals. Development, orientation mechanisms, agonistic behavior, communication, habituation and conditioning, and learning mechanisms. One course. *Staddon*

**214. Development of Social Interaction.** Major developments of children's interactions with others (e.g., attachment, social play, aggression, sex-typing, and moral reasoning). Ethological, learning, personality, and cognitive-developmental viewpoints. One course. *Eckerman*

**215. Cognitive Development.** Major concepts of the development of knowledge in children with particular attention to Piaget. Consideration of educational implications. One course. *L. Wallach*

**216. Biological Psychology.** The neural basis of behavior with special emphasis on the organization and evolution of the neocortex and the dorsal

thalamus. An historical approach is taken using original texts by LeGros Clark, Elliot Smith, Herrick, Sherrington, Cajal, Campbell, and many others. While emphasis is on the neocortical sensory systems, the structure and function of the limbic system and hypothalamus are reviewed. (Also listed as Anatomy 216.) One course. *Diamond*

**217. Social Psychology.** Social factors in cognition, models of social interaction, conformity and social influence, and attitude development and change. One course. *Levy*

**218. Research Methods in Social Psychology.** Emphasis on the interplay between experimental design and technique. One course. *Levy*

**219. Neural Bases of Behavior.** Structure and function of the nervous system as related to problems of sensory-motor processes, learning, and memory. One course. *R. Erickson*

**230. Social Behavior of Animals.** Developmental, ecological, and physiological aspects of territorial, sexual, parental, and aggressive behavior. One course. *C. Erickson*

**232. Group Processes and Group Development.** Group clinical processes and developmental social processes. Readings and field observations in group behaviors ranging from those of toddlers to the elderly. Prerequisite: consent of instructor. One course. *Lakin*

**234. Seminar in Personality.** Selected topics of current interest concerning empirical research on personality. Strategies for the definition of research questions and the evaluation of research progress. One course. *M. Wallach*

**238S. Electroencephalogram and Psychological Function.** A survey of experimental and clinical literature on brain wave correlates of intelligence, personality, behavior disorders, epilepsy, sleep, sensory stimulation, reaction time, and attention. Emphasis on the electrophysiology of conditioning and learning. Lectures, laboratory demonstrations, and clinical case presentations. One course. *Marsh*

**245. Personality Theory.** Representative theories of human functioning, from Freud to contemporary approaches. One course. *Staff*

**253. Psychological Approaches to Public Policy Analysis.** (Also listed as Public Policy Studies 253.) One course. *McConahay*

**260. Science, Technology, and Society.** Science as a social phenomenon. Relations of science to technology and their articulation through public policy. Interaction of the institutions of science with other societal institutions. (Also listed as Sociology 260.) One course. *McKinney and Bevan*

**261. Science, Politics, and Government.** The structure and values of the scientific community, the mechanism and strategies of government, and their mutual interdependence in American society. (Also listed as Public Policy Studies 255 and Sociology 261.) One course. *Bevan and McKinney*

**271S. Selected Problems.** One course. *Staff*

**273, 274. Statistical Principles in Experimental Design.** The problems of scientific inference; methods of data analysis and issues in experimental design. Two courses. *Roth*

**277. Neuroanatomical Basis of Behavior.** Basic neuroanatomy and its physiologic and functional correlates. (Also listed as Anatomy 299.) One course. Fall. *Hall*

**283, 284. The History of Psychology.** First semester: Aristotle to Kant; second semester: development of modern psychology. Prerequisite for Psychology 284: Psychology 283 or consent of instructor. Two courses. *Guttman*

**286S. Psychophysiology of Hearing.** Relation of anatomy and physiology to psychophysics of the auditory system. Prerequisite: consent of instructor. One course. *Casseday*

## DEPARTMENTAL MAJOR

*Major Requirements.* Eight courses in psychology, including 11, 117, and three courses numbered 101 through 109; of these three courses, one must be 101, 102, 103, or 107; one must be 104, 105, 106, 108, or 109; and the third course may be of the student's selection; plus three additional psychology courses of the student's selection. Mathematics 53, 183, Economics 138, or Management Science 110 may be substituted for Psychology 117 but do not count as one of the eight required courses.

Students seeking a B.S. degree must complete, in addition to the above requirements, a minimum of two calculus courses and six additional courses in the natural sciences or mathematics.

## Public Policy Studies

Professor Fleishman, *Director*; Associate Professor McConahay, *Associate Director*; Assistant Professor Kuniholm, *Director of Undergraduate Studies*; Bonnie Bain, *director of Internship Programs and Placement Services*; Professors Hough (political science) and Lange (law); Associate Professors Behn, Blaydon, DeVries, Friedman, Ginsburg, Goodwyn (history), Grabowski (economics), Hawley, Murray, Price, Salamon, and Stack; Assistant Professors Cook, Decker, Eaker (business), Lipscomb, Nagin, and Vaupel; Lecturers Broder, Eagles, Green, Harris, Hochschild, Payne, Ross, and Zalkind; Adjunct Professor Hamburg; Visiting Professors Coles and Wallace

The policy studies major is an interdisciplinary social science program designed to provide students with the skills, analytical perspectives, and descriptive information which policy analysts need to deal effectively with major contemporary social problems. The course of study familiarizes the student with the kind of contribution each of several disciplines (political science, economics, social psychology, applied mathematics, and the humanities) can make to policy analysis. Opportunities are provided, both in the classroom and through field experiences, for students to integrate this material and apply it to analyzing specific public policy issues.

Students majoring in public policy are able to participate in a variety of learning experiences including seminars, lecture discussion classes, individual study, policy workshops, and an internship. In addition, students are urged to participate actively in numerous programs sponsored by the institute which supplement material covered in class. As a matter of policy, students are asked to evaluate teaching and course content and are provided both formal and informal opportunities to shape the institute's program and curriculum.

Courses in public policy are open to all students providing that the prerequisites (if any) cited for individual courses are met.

**55. Analytical Methods for Public Policy Making.** Basic concepts of analytical thinking including quantitative methods for assessing the probabilities of outcomes and appraising policy alternatives. Illustrated by problems faced by busy decision makers in government, business, law, medicine, etc. One course. *Vaupel*

**107. Comparative Environmental Policies.** (Also listed as Political Science 107.) One course. *McKean*

**110. Economic Analysis for Public Policy Making: Microeconomic and Nonprobabilistic Models.** Application of microeconomic analysis to public policy areas, including agriculture, housing, taxation, and income redistribution. Prerequisite: Economics 52 or equivalent. One course. *Behn, Cook, Eaker, Lipscomb, or Murray*

**112. Policy Evaluation and Experimentation.** Uses and limitations of statistical methods, including experimentation, for monitoring and evaluating public policies. Prerequisite: Public Policy Studies 55. One course. *Behn, McConahay, or Murray*

**114. Political Analysis for Public Policy Making.** Analysis of the political and organizational processes which influence the formulation and implementation of public policy. Alternative models. (Also listed as Political Science 145S.) One course. *Blaydon, Hawley, Hochschild, or Salamon*

**116. Policy Choice as Value Conflict.** Theoretical and practical problems in decision making in relation to conflicts of value and of interest. How norms deriving from professional ethics, ideology, law, and other sources are manifest in such policy issues as welfare, environmental management, and national defense. One course. *Payne, Decker, or Kuniholm*

**130S. Seminar in Selected Public Policy Topics.** Half-course each. *Staff*

**131S. The Politics of Educational Reform.** Contemporary demands for the reform of public schools in light of the history of reform efforts and various theories of social action and organizational change. First half of semester. Half-course. *Hawley*

**132S. Multinational Enterprises and Public Policy.** Current controversies concerning the policies of the United States and other countries toward foreign investments by large business firms. First half of semester. Half-course. *Vaupel*

**140. Behavior in Public Organizations.** Effect of political, social, and psychological factors on the behavior of public officials. Half-course. *Hawley*

**151. Administration of Justice.** Analysis of policy problems and conflicts involved in the operation of the criminal justice system. One course. *Nagin*

**152S. Administration of Justice, Summer Internship.** Prerequisite: Public Policy Studies 151. One course. *Staff*

**154. Communications Policy.** Analysis of policy problems and conflicts involved in governmental regulation of the communications media. Prerequisite: Consent of instructor. One course. *DeVries and Friedman*

**155S. Communications Policy, Summer Internship.** Prerequisite: Public Policy Studies 154. One course. *Staff*

**157. Health Policy.** Analysis of health care problems and policies. One course. *Ginsburg and Lipscomb*

**158S. Health Policy, Summer Internship.** Prerequisite: Public Policy Studies 157. One course. *Staff*

**160S. Energy Technologies and Their Social Impact.** Physical energy: fossil fuels, nuclear, and solar power. Social implications of its use. One course. *Wallace*

**171S. Family, Life Cycle, and Public Policy.** Examination of assumptions and politics that have led to existing family policy in complex societies. Implica-



tion of cross-cultural analysis for the reformulation of public policies affecting family life. First half of semester. Half-course. *Stack*

**173S. Migrant Workers and Public Policy.** Public policy in agriculture, labor, health, education, and welfare related to the problems faced by migrant agricultural workers. Half-course. *Payne*

**174. Technology Assessment and Social Choice.** (Also listed as Engineering 174.) One course. *Garg*

**175S. The Palestine Problem and United States Public Policy.** Identification of Arab and Zionist perceptions; alternatives available to American decision makers; interest group pressures on United States policies; historical analysis as a means to improve public policy. One course. *Kuniholm*

**176S. Documentary Photography and Public Policy.** Television, film, and still photography. One course. *Payne and staff*

**180S. Writing for the Media.** Workshop on writing a news story, editorials, and features for the print media. Prerequisite: consent of instructor. One course. *Green*

**184S. Effect of Mass Media, Particularly Television, on Political Attitudes.** Impact of mass media. Research on various "theories" of the influence of the media. One course. *McConahay*

**186. The Shaping of the News.** The media as a social and political institution in the shaping of public policy. Treatment of the news by editors and journalists to include economic, political, and professional concerns. One course. *Friedman*

**187S. Migrant Workers and Public Policy.** Public policy in agriculture, labor, health, education, and welfare related to the problems faced by migrant agricultural workers. Fall. One course. *Payne*

**190. Internship.** For students working in a public agency, political campaign, or other policy-oriented group under the supervision of a faculty member. Prerequisite: prior consent of Director of Internship Programs and Director of Undergraduate Studies. One course. *Staff*

**191, 192. Independent Study.** Directed reading and research. Up to two courses. *Staff*

**193, 194. Independent Study.** Directed reading and research for seniors. Up to two courses. *Staff*

**195S. Seminar in Selected Public Policy Topics.** One course each. *Staff*

#### **For Seniors and Graduates**

**204. Ethics in Political Life.** (Also listed as Political Science 204.) One course. *Spragens*

**215S. Public Policies to Save Lives.** Economic, political, legal, and ethical issues in governmental efforts to reduce mortality through various health and safety programs and regulations. One course. *Cook and Vaupel*

**216S. Comparative Politics of the Welfare State.** (Also listed as Political Science 216S.) One course. *Staff*

**217. Microeconomics and Public Policy Making.** Consumption and production theory, welfare economics, theories of collective choice, market structures and regulation, and nonmarket decision making. One course. *Staff*

**219. The Politics of the Policy Process.** The formulation of public policy making, substantive policies in a variety of contexts from local government to international affairs; the role of legislatures, interest groups, chief executives, and the bureaucracy in defining alternatives and in shaping policy from agenda formulation to implementation. (Also listed as Political Science 248.) One course. *Staff*

**221. Analytical Methods I: Decision Analysis for Public Policy Makers.** Methods for structuring decision dilemmas and decomposing complex problems, assessing the probabilities of uncertain consequences of alternative decisions, appraising the decision maker's preferences for these consequences and for re-examining the decision. (Not open to students who have taken Public Policy Studies 55.) One course. *Staff*

**222. Analytical Methods II: Data Analysis for Public Policy Makers.** Sampling theory, Bayesian statistics, and regression analysis. Examples from problems in health care, transportation, crime, urban affairs, and politics. (Not open to students who have taken Public Policy Studies 112.) One course. *Staff*

**223S. Ethics and Policy Making.** Normative concepts in politics—liberty, justice, the public interest: historical and philosophical roots; relationship to one another and to American political tradition; and implications for domestic policy problems. (Also listed as Political Science 245S.) One course. *Price*

**231. Analytical Methods III: Quantitative Policy Evaluation.** Problems in quantifying policy target variables such as unemployment, crime, and poverty. Experimental and nonexperimental methods for evaluating the effect of public programs, including topics in experimental design, regression analysis, and simulation. Prerequisite: Public Policy Studies 222 or the equivalent. One course. *Staff*

**232. Analytical Methods IV: Topics in Economic Policy.** Cost benefit analysis of public programs. Public utility regulation, pollution regulation, hospital rate setting, regulation of product safety. Quantitative methods and microeconomic theory for analysis of both normative and positive aspects of economic policy. Prerequisites: Public Policy Studies 110 or 217 or Economics 149 and familiarity with regression analysis, or enrollment in Public Policy Studies 231 concurrently. One course. *Staff*

**233. Analytic Approaches to Bargaining, Cooperation, and Competition.** Application of principles of game theory, economics, and psychology to labor-management negotiation, plea bargaining, public interest group formation, corporate collusion, business mergers, and arms limitations. One course. *Blaydon*

**236S. Public Financial Management.** State and local governments. Budgetary requirements and fund raising. One course. *Blaydon*

**246. Population Policy.** (Also listed as Sociology 246.) One course. *Back*

**247. Political Participation and Policy Outcomes.** (Also listed as Political Science 247.) One course. *Hough*

**250. Public Policy and the Arts.** Problems of democratic and aesthetic values in respect to past and present patterns of public support for the arts; for example: subsidies, tax policy, censorship and the effect of public choices on standards of quality. Visual and performing artists and policy makers from government and business will participate. Fall. One course. *Payne*

**252S. National Security Policy.** Analysis of current national security issues from a variety of analytical and historical perspectives. One course. *Kuniholm*

**253. Psychological Approaches to Public Policy.** Contribution of psychological analysis to an understanding of social issues such as poverty, drug abuse, crime, crowding, and race relations, the ways problems are recognized, and why different policy alternatives are selected, (e.g., those that "blame the victim"). (Also listed as Psychology 253.) One course. *McConahay*

**254. Transportation Planning and Policy Analysis.** (Also listed as Civil Engineering 216.) Prerequisite or corequisite: Civil Engineering 116 or consent of instructor. One course. *Behn and Lathrop*

**255. Science, Politics, and Government.** The structure and values of the scientific community, the mechanisms and strategies of government, and their mutual interdependence in American society. (Also listed as Psychology 261 and Sociology 261.) One course. *Bevan and McKinney*

**256. The Economics of Health Care.** A critical examination of the health care industry and government policies designed to alter market demand and supply relationships. Topics include national health insurance; the relationship between insurance, supply constraints, and inflation; the supply and distribution of health manpower; hospital cost containment policy; and approaches to the optimal allocation of health care viewed as a social good. Prerequisite: Economics 149 or the equivalent, or consent of the instructor. One course. *Ginsburg or Lipscomb*

**260S. Public Policy Research Seminar: The Administration of Justice.** Examination of public policy issues concerning the administration of justice. One course. *Cook or Nagin*

**261S. Research Seminar: Health Policy.** Determinants and impacts of public policies designed to improve the equity and efficiency of health services. The supply and distribution of services; the cost of services and alternative modes of financing; the quality of services and alternative mechanisms of quality control. Applied research paper. One course. *Ginsburg and Lipscomb*

**262S. Communication Policy and the Law.** Theory and development of the First Amendment and its relation to the public policies dealing with regulation of the electronic and print media, the rights of privacy and access to information. One course. *Lange*

**263S. Public Policy Research Seminar: Urban and Regional Development Policy.** Dynamics of urban and regional development analyzing alternative policy instruments for coping with the social, environmental, and economic effects. Housing, land use, transportation, taxation, environmental protection, and related urban development problems and policies. Prerequisite: Political Science 176, Political Science 109, Economics 234 or consent of instructor. One course. *Salamon*

**264S. Public Policy Research Seminar: Topics in Public Policy I.** Selected topics. One course. *Staff*

**270S. Humanistic Perspectives on Public Policy.** Modes of inquiry into aspects of social life important to policy makers but beyond the normal reach of social science. Reading from James Agee, Robert Coles, Eudora Welty, James Baldwin, George Eliot, and others. Prerequisite: consent of instructor. One course. *Payne and Coles*

**271. The Uses of History in Public Policy I.** Introduction to historical analysis as a technique for formulating and evaluating public policy. (Also listed as History 203.) One course. *Goodwyn*

**272. Poverty in the United States: An Historical Perspective.** Social, political, and cultural origins and contemporary policy alternatives. (Also listed as History 272.) One course. *Decker*

**273S. The Uses of History in Public Policy II.** Introduction to historical analysis as a technique for formulating and evaluating public policy. Emphasis on public policy decisions abroad since World War II, including the structuring of selected contemporary problems in light of their historical contexts. (Also listed as History 204S.) One course. *Kuniholm*

**274. Mental Health Policy and American Culture.** Effect of culture and values on perceptions of mental health among diverse ethnic groups and social classes. Formation and implementation of related public policies. One course. *Stack*

**275. Class, Ethnicity, and Social Policy.** The uses of anthropological modes of analysis for understanding social issues and public policy with a focus on class, work, ethnicity, sex roles, and the family. (Also listed as Anthropology 277.) One course. *Stack*

**276S. National Policies and the Family.** Effects of public policies on American families, the feasibility of a national family policy, and the parameters of family impact statements. Prerequisite: Public Policy Studies 171S or consent of instructor. One course. *Stack*

**277. Sex Discrimination and the Law.** Legal, social, and familial aspects of sex discrimination. Topics include the Equal Rights Amendment, employment, differential treatment in the criminal law. Fall. One course. *Stack*

**283S. Congressional Policy Making.** (Also listed as Political Science 283S.) One course. *Price*

## INTERNSHIP COURSES

The internship courses provide students with an opportunity to develop a basic understanding of one or more public policy areas, to apply that understanding in a job during the summer and to return to the classroom to build on this knowledge and experience. Normally, students take a two-course sequence to receive credit for the field experience requirement of all public policy studies majors. Prior to participation in the internship program, all majors must have completed Public Policy Studies 55 and three of the four core courses (Public Policy Studies 110, 112, 114, or 116). This requirement may be waived by the Director of Undergraduate Studies for transfer students or others in unusual circumstances. Applications for enrollment in the internship program must be completed in the early fall through the Director of Internship Programs. Stipends are usually provided for all public policy majors enrolled in one of the following internship courses: Public Policy Studies 152S, 155S, or 158S.

All majors are encouraged to take an advanced follow-up course in the area of their summer internship.

## THE MAJOR

*Prerequisites.* Economics 2 or 52, Political Science 91, and Public Policy Studies 55.



*Major Requirements.* Public Policy Studies 110, 112, 114, 116, plus three additional courses one of which must be a 200-level course. A policy-oriented field experience approved by the Director of Undergraduate Studies is required.

## Religion

Professor Osborn, *Acting Chairman*; Associate Professor Bland, *Acting Director of Undergraduate Studies*; Professors Bradley, Jones, Lincoln, Long, Kort, Poteat, Price, and Wintermute; Associate Professors Charlesworth, Corless, Lawrence, McColough, E. Meyers, and Partin; Assistant Professors Chapin Massey and C. Meyers; Lecturer Shows

Study in the Department of Religion arises from and leads to the awareness that an understanding of religion is crucial to an understanding of persons and of human societies. The curriculum is designed to develop this understanding in two distinct but inseparable ways; first, through the examination of the particulars of specific religious traditions; and, second, through theoretical studies of an analytic, comparative, and constructive nature.

Introductory courses (Religion 50, 51, 52, 55, 56, 57, 58, and 59) are open to all undergraduates. These courses also help fulfill distributional requirements for the religion major and are therefore cross-listed at the head of appropriate divisions of the curriculum. All 100-level courses are open to all undergraduates with the exception of specially designated seminars. Courses at the 200-level are open to upperclassmen with the consent of the instructor.

### INTRODUCTORY COURSES

**50. The Old Testament.** Historical, literary, and theological investigations. Not open to students who have had Religion 55 or 55D. (Also listed under Judaic Studies.) One course. *Jones, C. Meyers, E. Meyers, and Wintermute*

**51. Introduction to Judaic Civilization.** Continuity and change in the major periods of Judaism. (Also listed under Judaic Studies.) One course. *Bland or E. Meyers*

**52. The New Testament.** Origins, development, and content of thought. Not open to students who have had Religion 55 or 55D. One course. *Chapin Massey, Charlesworth, Jones, and Price*

**55. The Religion of the Bible.** A historical, cultural, and theological study of the Old and New Testaments. Not open to students who have had Religion 50, 50D, 52, 52D. One course. *Staff*

**50D, 52D, 55D.** Same as 50, 52, 55 with discussion section included. One course each. *Staff*

**56. The Black Religious Experience in America.** From the slave period to the present. (Also listed as Afro-American Studies 56.) One course. *Lincoln*

**57. Introduction to Religions of Asia.** Problems and methods in the study of religion, followed by a survey of the historical development, beliefs, practices, and contemporary significance of the Islamic religion and religions of South and East Asia. One course. *Bradley, Corless, Lawrence, and Partin*

**58. Interpretations of Religion in Western Culture.** Western religion as explained by contemporary sociologists, psychologists, anthropologists, and theologians. One course. *Bland or Chapin Massey*

**59. Problems in Theology and Ethics.** Philosophical, theological, and cultural problems, such as the existence of God, ethical theory, religious language, and the relation of religion to culture. One course. *McCollough or Osborn*

## RELIGIOUS TRADITIONS: THEIR ORIGINS AND DEVELOPMENT

### African and Asian Traditions

Introductory Course 57.

**71A, 72A. Freshman-Sophomore Seminars: African and Asian Traditions.** Topics and instructors to be announced. Two courses. *Staff*

**140. Religions of India.** Major religious traditions of the subcontinent. Hinduism, Buddhism, Jainism, and Islam. One course. *Bradley or Lawrence*

**141. Religions of China and Japan.** Traditional religion in China and Japan and its interaction with Sino-Japanese Buddhism. One course. *Corless*

**147. Muhammad and the Qur'an.** The Qur'an in relation to the religious experience, life, and work of Muhammad. One course. *Partin*

**149. Buddha and Buddhism.** A systematic introduction to the origins and spread of Buddhist thought and practice. One course. *Corless*

**152. Islamic Mysticism.** Sufism as an ascetical protest movement that affected the worldwide growth of Islam. One course. *Lawrence*

**160, 161. Introduction to the Civilizations of Southern Asia.** (Also listed as Interdisciplinary Courses 101, 102.) Two courses. *Lawrence*

**162, 163. Introduction to Islamic Civilization.** (Also listed as Interdisciplinary Course 162, 163.) Two courses. *Lawrence and staff*

**195A, 196A. Junior-Senior Seminars: African and Asian Traditions.** Topics and instructors to be announced. Two courses. *Staff*

**217. Islam in India.** History and thought of major Indian Muslims from Biruni to Wali-Ullah, with special attention to the role of Sufism. An introduction to selected Muslim scholars and saints who contributed to the interaction between Islam and Hinduism in Northern India during the second millenium A.D. One course. *Lawrence*

**218. Religion in Japan.** A survey of religion in Japan, with specific emphasis on indigenization and attempts at synthesis. An approach to the meaning of the words *religious* and *secular* in the Japanese situation. One course. *Corless*

**254. Introduction to African Religions.** One course. *Long*

**255. Seminar On African Religions.** One course. *Long*

**265. Religions of the West Africa Diaspora.** Religious development of Africans displaced to the Western Hemisphere by slavery. One course. *Lincoln*

**284. The Religion and History of Islam.** Origins and development of the Islamic community and tradition, with particular attention to the religious element. One course. *Partin*

**286. Religious Trends in the Indian Subcontinent.** Leaders and movements among the religions of the subcontinent, from the coming of the Europeans to Independence. One course. *Bradley*

**287. The Scriptures of Asia.** Translations of basic texts from the religious traditions of India, China, and Japan. One course. *Bradley*

**288. Buddhist Thought and Practice.** An historical introduction to Buddhist thought and practice, with special attention to their interrelationship in the living religion. One course. *Corless*

### **Jewish and Christian Traditions**

Introductory Courses 50, 51, 52, 55, and 50D, 52D, 55D.

**71B, 72B. Freshman-Sophomore Seminars: Jewish and Christian Traditions.** Topics and instructors to be announced. Two courses. *Staff*

**103. The Idea of Messiah in the Bible.** An examination of the meaning and image of Messiah in biblical literature. One course. *E. Meyers*

**104. The Prophets of the Old Testament.** Their historical setting and message. (Also listed under Judaic Studies.) One course. *Wintermute*

**105. Theology of the Old Testament.** Emphasis upon history and eschatology, covenant, messianism, and wisdom. (Also listed under Judaic Studies.) One course. *Wintermute*

**106. Jesus and the Synoptic Gospels.** The gospel tradition in the New Testament. One course. *Charlesworth*

**107. Theology of the New Testament.** A systematic analysis of the theologies of the New Testament writers and an attempt to synthesize the basic and shared themes. One course. *Charlesworth or Price*

**108. The Life and Letters of Paul.** Paul's role in the expansion of the Christian movement, the most important aspects of his thought, and his continuing influence. One course. *Price*

**109. Women in the Biblical Tradition: Image and Role.** (Also listed under Judaic Studies.) One course. *C. Meyers*

**110. Archaeology and Art of the Biblical World.** The material culture of ancient Palestine as it relates to the Hebrew Bible, the New Testament, and early Judaism. (Also listed under Judaic Studies.) One course. *C. Meyers or E. Meyers*

**111. The Historical Jesus.** Historical research on the life of Jesus. One course. *Charlesworth or Price*

**115-116. Introduction to Biblical Hebrew.** (Divinity School courses open to undergraduates with permission of the instructor.) Elements of phonology, morphology, and syntax. Exercises in reading and writing Hebrew. Second semester: study of the weak verb; exegetical treatment of the Book of Jonah. (Also listed under Judaic Studies.) Two courses. *Bailey*

**120. History of the Christian Church.** Crucial events, issues, forms, and writings that have shaped the Christian community and influenced Western civilization from the time of the early church to the Reformation. One course. *Chapin Massey*

**121. Christianity and European Culture: 300-1600.** Christian life and thought in interaction with the developments in Pre-Medieval, Medieval, Renaissance, and early Reformation Europe. One course. *Chapin Massey*

**122. Protestantism and Catholicism in Modern Europe.** Reformation and Counter-Reformation, confessionalism, religious conflicts, and the secularization of European Christianity. One course. *Chapin Massey*

**124. Christianity in the United States.** Leaders and issues in representative movements and institutions. One course. *Jones*

**128. The Background of Contemporary Christian Thought: 1918-1960.** Theology of Karl Barth, Rudolf Bultmann, Paul Tillich, Karl Rahner, Reinhold Niebuhr, and others. One course. *Osborn*

**129. Contemporary Christian Thought, 1960 to the Present.** Trends in contemporary theology, such as secular theology, theology of hope, and liberation theology. One course. *Osborn*

**131D. Principles of Archaeological Investigation.** Supervised field work, visits to other excavations, introduction to ceramic chronology, numismatics, and other related disciplines. Excavation of a late Roman village in Galilee. Offered in Israel, only in the summer. (Also listed as Anthropology 131D and under Judaic Studies.) One course. *E. Meyers*

**132D. Palestine in Late Antiquity.** The history, literature, and archaeology of Roman Palestine with particular emphasis on Galilee in rabbinic and early Christian times. (Also listed under Judaic Studies.) One course. *E. Meyers*

**133. The Foundations of Post-Biblical Judaism.** History, religion, and literature of Pharasaic and sectarian Judaism from the time of Ezra to Rabbi Judah. (Also listed under Judaic Studies.) One course *E. Meyers*

**134. Jewish Mysticism.** The main historical stages, personalities, texts, and doctrines from rabbinic to modern times. (Also listed under Judaic Studies.) One course. *Bland*

**135. Jewish Religious Thought.** Doctrines, dialectics, and religious attitudes of pre-Enlightenment theologians. (Also listed under Judaic Studies and under Medieval and Renaissance Studies.) One course. *Bland*

**136. Contemporary Jewish Thought.** Modern Jewish thought from Mendelssohn to the present, with particular reference to American thinkers. (Also listed under Judaic Studies.) One course. *E. Meyers or Bland*

**137. Jewish Ritual and Theology.** Introduction to thought and practice as reflected in the historical and literary development of *The Prayer Book*. (Also listed under Judaic Studies.) One course. *Bland*

**139. Modern Hebrew.** Representative texts from the modern period, with an introduction to the colloquial language of Israel. (Also listed under Judaic Studies.) One course. *Staff*

**145. Religious Quests of the Greco-Roman World.** Sectarian Judaism, the Mystery Cults, and Gnosticism. One course. *Wintermute*

**195B, 196B. Junior-Senior Seminars: Jewish and Christian Traditions.** Topics and instructors to be announced. Two courses. *Staff*

**207, 208. Intermediate Biblical Hebrew.** Grammar with reading and exegesis of Old Testament prose and poetry. (Also listed as Old Testament 207, 208 in the Divinity School and under Judaic Studies.) Prerequisite: at least one year of Hebrew or consent of the instructor. Two courses. *Wintermute and E. Meyers*

**220. Rabbinic Hebrew.** Interpretive study of late Hebrew, with readings from the Mishnah (Avoth and Avodah Zarah). (Also listed under Judaic Studies.) One course. *E. Meyers or staff*

**221. Readings in Hebrew Biblical Commentaries.** Selected Hebrew texts in Midrash Aggadah and other Hebrew commentaries reflecting major trends of classical Jewish exegesis. (Also listed under Judaic Studies.) One course. *Bland*



**226B. Exegesis of the Greek New Testament (Romans).** Prerequisite: consent of instructor. One course. *Price*

**226D. Exegesis of the Greek New Testament.** Prerequisite: consent of the instructor. One course. *Price or M. Smith*

**239. Introduction to Middle Egyptian.** Grammar and readings in hieroglyphic texts relating to the Old Testament. One course. *Wintermute*

**244. The Archaeology of Palestine in Hellenistic-Roman Times.** The study of material and epigraphic remains as they relate to Judaism in Hellenistic-Roman times, with special emphasis on Jewish art. (Also listed under Judaic Studies.) One course. *E. Meyers*

**248. Theology of Karl Barth.** A historical and critical study of Barth's theology. One course. *Osborn*

**258. Coptic.** Introduction to the Sahidic dialect with selected readings from Christian and Gnostic texts. Prerequisite: one year of Greek or consent of the instructor. One course. *Wintermute*

Students interested in acquiring additional linguistic tools required for graduate courses in Biblical studies are referred to the offerings of the classical studies department for elementary Greek and the Divinity School bulletin for courses in Aramaic.

## **ANALYTIC, COMPARATIVE, AND CONSTRUCTIVE STUDIES**

Introductory Courses 56, 58, and 59.

**71C, 72C. Freshman-Sophomore Seminars: Analytic, Comparative, and Constructive Studies.** Topics and instructors to be announced. Two courses. *Staff*

**126. Themes in Christian Theology.** A study of basic Christian teachings. One course. *Osborn*

**130. Christian Ethics.** Ethical implications of Biblical religion, the historical development of Christian ethics, and the ethical dimensions of contemporary social life. One course. *McCollough*

**138. Political Leadership and the Black Church.** Turner, Powell, King, Malcolm X, and others. (Also listed as Afro-American Studies 138.) One course. *Lincoln*

**142. Comparative Mythology.** Nature and functions of religious myth in Judaism, Christianity, Islam, Hinduism, and Buddhism. One course. *Partin*

**143. Mysticism.** The mystical element of religion: Hinduism, Buddhism, Christianity, and Islam. One course. *Bradley*

**144. Black Cults and Sects in America.** Cult-sect phenomena. (Also listed as Afro-American Studies 144.) One course. *Lincoln*

**146. Modalities of the Sacred.** Analysis of the structure of hierophanies in relation to religious and cultural history. One course. *Long*

**148. Modern American Religious Cults.** Children of God, Unification Church, Scientology, Fereria, Transcendental Meditation, Krishna Consciousness, and Bahai, and others. One course. *Partin*

- 150. Religion and Human Sexuality.** A study of the current sexual revolution with the aim of examining options and determining relevant Judaic and Christian attitudes and actions. One course. *Staff*
- 151. Ethical Issues in Social Change and Public Policy.** American moral tradition and factors in social change in the normative analysis of public policy, with a consideration of specific ethical issues. One course. *McCollough*
- 153. The Enlightenment, Romanticism, and Christianity.** Major seveneenth through nineteenth-century views of nature, history and freedom in understanding Christianity. One course. *Chapin Massey*
- 154. Radical Criticisms of Christianity.** Hegel's philosophy of religion and its use by the left Hegelians, including Marx, to criticize the function of Christianity in society. One course. *Chapin Massey*
- 155. Ethical Issues in the Life Cycle.** Human development viewed in religious, ethical, and psychological perspectives. One course. *McCollough*
- 156. Christian Marriage and the Family.** Marriage and the family in American society studied from the Christian perspective. One course. *Staff*
- 158. Psychology and Religion.** Contributions of major psychological theories to an understanding of religion, especially Christianity. One course. *Shows*
- 166-167. Ethics and the Professions.** Classical and contemporary ethical theories and secular and Judaeo-Christian moral traditions as contexts for considering the ethical problems of the professions. Lectures accompanied by discussions of particular professions, e.g., law, medicine, engineering, and business. To be taken concurrently. (Also listed as Philosophy 166-167.) Two courses. *McCollough and Roberts*
- 170. Problems of Religious Thought.** Analysis of uses of 'know,' 'true,' 'mind,' 'body,' 'time,' 'person,' 'love,' 'meaning,' in modern Western culture as introduction to religious reflection. Fall. One course. *Poteat*
- 172. Religion and Tragedy.** Influence of the Judaic-Christian religious tradition on the development of the tragic view of life. Spring. One course. *Poteat*
- 174. Technology Assessment and Social Choice.** (Also listed as Engineering 174 and Public Policy Studies 174.) Spring. One course. *Garg and McCollough*
- 178. Existentialism.** Religious roots, development, and contemporary expressions. One course. *Staff*
- 187. Religious Elements in Classical and European Literature.** A consideration of the religious elements in representative writings. One course. *Kort*
- 188. Recent Literature and its Religious Implications.** Religious elements in recent literature. One course. *Kort*
- 195C, 196C. Junior-Senior Seminars: Analytic, Comparative, and Constructive Studies.** Topics and instructors to be announced. Two courses. *Staff*
- 212. Policy Making and Theological Ethics.** Relation of knowledge, power, and values in policy making; models of decision making in the policy sciences and their ethical implications. One course. *McCollough*
- 232. Methods in Religion and Literature.** An examination of various scholarly methods for identifying and addressing issues and problems in religion and literature. One course. *Kort*

**233. Modern Narratives and Religious Meanings.** A study of kinds of religious meaning or significance in representative American, British, and continental fiction of the first half of the twentieth century. One course. *Kort*

**238. Jewish Responses to Christianity.** Apologetic and polemical themes in rabbinic, medieval, and contemporary writings. (Also listed under Judaic Studies.) One course. *Bland*

**264. The Sociology of the Black Church.** An effort to identify, define, describe, and interpret the Black Church. One course. *Lincoln*

**265. Religions of the West Africa Diaspora.** Religious developments of Africans displaced to the Western Hemisphere by slavery. One course. *Lincoln*

**280. The History of Religions.** A study of the methodology of the history of religions, the nature of religious experience, and specific categories of religious phenomena. One course. *Partin*

**282. Myth and Ritual.** Historical and phenomenological study of myth and ritual in their interrelationships in the history of religions, with particular attention to religious pilgrimage. One course. *Partin*

**286. Religious Trends in the Indian Subcontinent.** Leaders and movements among the religions of the subcontinent from the coming of the Europeans to independence. One course. *Bradley*

## INDEPENDENT STUDY

**191, 192. Independent Study.** For freshmen and sophomores with departmental approval. Two courses. *Staff*

**193, 194. Independent Study.** For juniors and seniors with departmental approval. Two courses. *Staff*

**197-198. Honors Research.** Consent of the Director of Undergraduate Studies required. Two courses. *Staff*

## DEPARTMENTAL MAJOR

*Major Requirements.* Eight courses, which must include at least two introductory courses (numbered 50 through 59). The distribution of courses must also include at least one each from the categories "African and Asian Traditions," "Jewish and Christian Traditions," and "Analytic, Comparative, and Constructive Studies." One of the eight courses must also be a junior-senior seminar or a 200-level course.

The student, in consultation with an assigned adviser and with the adviser's approval, should elect four of the eight courses in such a way that they will constitute a thematic or methodological concentration on a particular aspect of religion.

To prepare for graduate or professional study of religion, the Department of Religion recommends that majors complete at least two years of college-level study, or the equivalent, of a foreign language. Master of Arts and Doctor of Philosophy programs often require examination in one or two foreign languages. Students planning to attend a theological seminary should note that knowledge of Biblical languages, as well as Latin, frequently is presupposed or required. Those planning to pursue studies of Asian religions should begin appropriate language study as part of their undergraduate preparation.

*Honors.* The department offers work leading to graduation with distinction. For further information consult the director of undergraduate studies in religion and the section on honors in this bulletin.

# Reserve Officers Training Program

## AIR FORCE AEROSPACE STUDIES

Professor Dutton, Lt. Colonel, USAF, *Chairman*; Assistant Professor Margerum, Captain, USAF, *Director of Undergraduate Studies*; Assistant Professors Hickman, Lt. Colonel, USAF; and Delay, Captain, USAF.

**Eligibility Requirements.** All freshmen, male or female, are eligible to enroll in the general military course in the Air Force ROTC. For enrollment in the Professional Officer Course, the student must have completed successfully either the general military course or the six-weeks field training course; must execute a written agreement with the government to complete the Professional Officer Course; must be sworn into the enlisted reserve; and must agree to accept a commission in the United States Air Force Reserve upon graduation. In addition, each student must take at least one course in mathematical reasoning prior to graduation/commissioning.

**Deposit.** Each student must make a deposit of ten dollars with the Bursar's office to ensure return of all government property.

### General Military Courses

#### *First Year*

**1. United States Military Forces in the Contemporary World.** Development of aerospace power in the United States; mission, doctrine, and organization of the United States Air Force; and its relationship to the other services within the Department of Defense. (May not be counted to satisfy graduation requirements.) Half-course. *Dutton*

**4. Leadership Laboratory.** No course credit. *Staff*

#### *Second Year*

**51. Development of Air Power.** Growth and development of air power from dirigibles and balloons to the present; emphasizing evolution of concepts and doctrine governing air power employment in support of national objectives. (May not be counted to satisfy graduation requirements.) Half-course. *Delay*

**54. Leadership Laboratory.** No course credit. *Staff*

### Professional Officer Courses

All students selected to continue aerospace studies pursue the following courses:

#### *First Year*

**104. Leadership Laboratory.** No course credit. *Staff*

**105S. Aerospace Leadership and Management.** An introduction to management fundamentals to include the knowledge base and process of managing. One course. *Hickman*

**106S. Aerospace Leadership and Management.** Application of management fundamentals to duties as junior officers/executives to include principles of leadership. One course. *Hickman*

#### *Second Year*

**203. The Problems of Flight.** Mandatory for pilot and navigator cadets; approval of instructor for all others. Half-course. *Dutton*



**204. Leadership Laboratory.** No course credit. *Staff*

**205S. National Security Forces in Contemporary American Society.** Current questions of the role and function of the professional military officer in a democratic society and the complex relationships in civil-military interactions. One course. *Margerum*

**206S. National Security Forces in Contemporary American Society.** Formulation and implementation of American defense policy. One course. *Margerum*

## NAVAL SCIENCE

Visiting Associate Professor Krause, Commander, United States Navy, *Acting Chairman and Director of Undergraduate Studies*; Visiting Assistant Professors Robinson, Major, United States Marine Corps; Williams, Lieutenant, United States Navy; Robbins, Lieutenant, United States Navy; Duncan, Lieutenant, United States Navy

Completion of all naval science courses listed is required for a commission. A maximum of four naval science courses may be offered as electives in satisfying degree requirements in Trinity College; only two naval science courses (junior or senior level) can be so offered in the School of Engineering. Fifteen hours of practical and applied leadership are required each semester.

**11L. Naval Orientation.** Military formations, movements, commands, courtesies, and honors; and elements of unit leadership. *Duncan*

**12. Naval Ships Systems.** Structure, elements of design, stability, compartmentation, communications, and propulsion systems as they bear on safe operation and combat or service effectiveness. One course. *Duncan*

**12L. Naval Ships Systems Laboratory.** Practical application of the theories and principles of naval ships systems. *Duncan*

**51L, 52L. Seapower and Maritime Affairs Seminar.** Strategic, tactical, and diplomatic aspects of seapower, including a detailed examination of the rise and current status of the Soviet navy. *Robinson*

**126. Concepts and Analyses of Naval Tactical Systems.** Detection systems, offensive and defensive capabilities. One course. *Williams*

**131. Navigation.** Theory, principles, and procedures of ship navigation, movements, and employment. Dead reckoning, piloting, and electronic principles of navigation as presented in the lecture series. Naval Science 131L is a concurrent requirement. One course. *Robbins*

**131L. Navigation Laboratory.** Practical application of the theories and principles of navigation as presented in the lecture series. *Robbins*

**132. Naval Operations.** Components of general naval operations, including concepts and application of tactical formations and dispositions, relative motion, maneuvering board, and tactical plots, rules of the road, and naval communications. Naval Science 132L is a concurrent requirement. One course. *Robbins*

**132L. Naval Operations Laboratory.** Practical application of the theories of naval operations as presented in the lecture series. *Robbins*

**141. Evolution of Warfare.** Survey of the development of weaponry, tactics, and strategy in warfare, as exemplified by selected confrontations through the Vietnamese war. One course. *Robinson*

**145L. Naval Organization and Management Laboratory.** Lines of command and control; organization for logistics, service, and support; research on the

practical application of fundamental management principles at lower echelons of navy management structure. *Williams*

**146L. Naval Ship Administration Laboratory.** Management and organizational concepts in shipboard command and control. *Williams*

**151. Amphibious Operations.** An examination of the development of United States amphibious doctrine, with emphasis on current applications of that doctrine. One course. *Robinson*

## Romance Languages

Professor Tetel, *Chairman*; Assistant Professor Bryan, *Director of Undergraduate Studies in French*; Associate Professor Garci-Gómez, *Director of Undergraduate Studies in Spanish*; Associate Professor Hull, *Supervisor of Language Instruction*; Professors Cordle, Fein, Niess, Osuna, and Wardropper; Associate Professors Ripley, Stewart, and Vincent; Assistant Professors Barlow, Caserta, Hedges, and Miller; Instructors Jackson and Pérez; Visiting Lecturer Worth

French 63, 74 and Spanish 63, 74 or equivalent are the prerequisites for all courses not taught in English. Students who, by reason of foreign residence, have had special opportunities in French or Spanish must be classified by the appropriate Director of Undergraduate Studies.

The intensive language courses 181, 182 are recommended for students who wish to acquire proficiency in a second foreign language before entering graduate school.

In literature, one credit is granted for a score of 3 or 4 and two credits for a score of 5 (French or Spanish 70, 71) in the examination of the advanced placement program. In language one advanced placement credit (French or Spanish 76) is granted for scores 3-5.

### FRENCH

#### Literature in English Translation

**113. Society and the Novel in Modern France.** Social structure and realities in fiction, beginning with the seventeenth century. One course. *Stewart*

**116. The Nineteenth-Century Novel.** Stendhal, Balzac, Flaubert, and Zola. One course. *Niess*

**151. Theory and Form of Tragedy.** A study of major theorists and an analysis of principal Greek, French, and English tragedies. (Also listed as Drama 151.) One course. *Staff*

**217. French Symbolism.** (See listing below under French Literature.) *Staff*

**228. French Poetry of the Twentieth Century.** (See listing below under French Literature.) *Staff*

**233. Contemporary French Theater.** (See listing below under French Literature.) *Staff*

**234. Proust.** (See listing below under French Literature.) *Staff*

#### Language and Civilization

**1-2. Elementary French.** Understanding, speaking, reading, and writing French. Language laboratory available for recording-listening practice. Two courses. *Hull and staff*

**63. Intermediate French.** Grammar review, reading, and oral practice, including laboratory experience. One course. *Hull and staff*

**74. Intermediate Readings in Modern French.** Readings, discussion, composition, listening practice. One course. *Hull and staff*

**76. Introductory French Conversation.** Practice in everyday conversational French. Prerequisite: French 63 or equivalent. Enrollment: maximum fifteen students. One course. *Bryan and staff*

**123. Conversations and Exposés.** Contemporary subjects. Prerequisite: French 76 or equivalent or consent of instructor. One course. *Bryan and staff*

**124S. Advanced Grammar and Composition.** A systematic study of the structure of formal French. Practice in writing. Prerequisite: French 123 or equivalent or consent of instructor. One course. *Bryan or Tetel*

**125. French in the New World.** French and Creole in Canada, New England, Louisiana, and the Caribbean. Origins, history, linguistic characteristics, current political and social issues. Prerequisite: French 74 or equivalent, or consent of instructor. One course. *Hull*

**126. French Phonetics.** Sounds, rhythm, intonation. Individual practice in language laboratory. Readings in phonetic theory. One course. *Hull*

**128. Advanced Translation and Stylistics.** Differences between French and English patterns of expression. Levels of usage. Practice in translation. Prerequisite: French 124S or equivalent; or consent of instructor. One course. *Hull*

**129. Foundations of French Civilization.** Its development up to the Revolution of 1789 in relation to European culture. Readings and discussions in French. One course. *Tetel*

**130. Modern French Civilization.** Nineteenth- and twentieth-century France, history, institutions, customs, and arts. Readings and discussions in French. One course. *Tetel*

**150T. Tutorial in Composition.** Half-course. *Barlow*

**181. Intensive French.** An introduction to the language. Prerequisite: four semesters of another foreign language or consent of instructor. One course. *Ripley and staff*

**182. Intensive French.** Readings in modern literature: analysis and discussion. Prerequisite: French 181 or consent of instructor. One course. *Ripley*

**210. The Structure of French.** Modern French phonology, morphology, and syntax. Readings in current linguistic theory. (Also listed under Linguistics.) One course. *Hull*

**224. History of the French Language.** The evolution of French from Latin to its present form; internal developments and external influences. (Also listed under Linguistics.) One course. *Hull*

## Literature

**70, 71.** (These numbers represent one or two course credits for advanced placement in literature.)

**101, 102. Introduction to French Literature.** An introduction to the major writers of the French literary tradition. Selections and complete works of poetry, fiction, theater, and essay. In the first semester: Middle Ages through the eighteenth century. In the second semester: nineteenth and twentieth centuries.

Lectures and discussions; short essays and tests. Conducted in French. Two courses. *Staff*

**103S, 104S. Discussions of Readings.** Selected topics. Open only to freshmen and sophomores. Two courses. *Staff*

**105. Explication de Texte.** A study of the French method of textual analysis, with selections primarily from nineteenth- and twentieth-century authors. For students who have taken French 101 or 102. One course. *Staff*

**106S. Montaigne and Self-Portraiture.** A reading of some *essais* in the light of the self-portrait in Renaissance art. (Also listed under Medieval and Renaissance Studies.) One course. *Tetel*

**108. Romanticism in French Literature.** Romantic theory and novelists including Constant, Stendhal, and Balzac; representative poets and dramatists including Lamartine, Hugo, Musset, and Vigny. One course. *Niess*

**109. Toward Modernism in French Poetry.** An introduction to modern trends in the nineteenth century; emergence from traditional romanticism; Art for Art's Sake and Parnassians (Gautier, Leconte de Lisle); the transition from decadence to symbolism (Baudelaire, Verlaine, Rimbaud, and Mallarmé). One course. *Barlow*

**110. French Comedy in the Seventeenth and Eighteenth Centuries.** The theatrical tradition of comedy and its evolution; readings from Corneille, Molière, Lesage, Marivaux, and Beaumarchais. (Also listed as Drama 152.) One course. *Stewart*

**111. French Drama of the Nineteenth Century.** A survey of the French theater from the Romantic period to the *Théâtre libre*. (Also listed as Drama 153.) One course. *Niess*

**112. French Drama of the Twentieth Century.** A survey of literature for the stage from 1890 to the present. One play each of Claudel, Maeterlinck, Jarry, Giraudoux, Cocteau, Ghelderode, Anouilh, Montherlant, Sartre, Camus, Genet, Ionesco, Beckett, Pinget, Vian, Arrabal. (Also listed as Drama 154.) One course. *Cordle*

**114S. The Sixteenth Century.** An introduction to the spirit of the French Renaissance as reflected in the literature of the age of Rabelais and Montaigne, Ronsard, and Du Bellay. (Also listed under Medieval and Renaissance Studies.) One course. *Tetel or Vincent*

**115. Realism and Naturalism in French Literature.** Flaubert, Maupassant, and Zola. One course. *Niess*

**117S. Masterpieces of French Medieval Literature.** Lyric poetry, epic romance, and theater from beginning to the middle French period. (Also listed under Medieval and Renaissance Studies.) One course. *Ripley*

**119. French Drama of the Seventeenth Century.** The plays of Corneille, Racine, and Molière are used to explore tragedy and comedy. (Also listed under Medieval and Renaissance Studies.) One course. *Jackson*

**120. The Roots of Modernity in Seventeenth-Century French Literature.** Analysis of form and thought in selected works of La Fontaine, Mme. de La Fayette, Pascal, La Rochefoucauld, and La Bruyère. One course. *Staff*

**121. The French Enlightenment.** Religion, politics, and philosophic and literary ideas of eighteenth-century France: Montesquieu, Voltaire, Rousseau, and others. One course. *Stewart*



**122. The Early French Novel.** Origins and evolution of the novel in the seventeenth and eighteenth centuries. One course. *Stewart*

**132. French Poetry of the Twentieth Century.** The symbolist heritage and surrealism. One course. *Barlow*

**133, 134. Contemporary French Life and Thought.** Major writers of the twentieth century and their historical and cultural circumstances. First semester: Claudel, Gide, Valéry, Proust, Apollinaire, Mauriac, Alain-Fournier, Cocteau. Second semester: Giono, Breton, Aragon, Malraux, Sartre, Beckett, Camus, Robbe-Grillet, Sarraute. Two courses. *Cordle*

**135. The Contemporary Novel in French Canada.** Major trends in the novel since World War II: social revolt, proletarianism, political and religious liberation, and rejection of the past. One course. *Niess*

**136. Film and the French Novel.** Relationship between film and the novel in twentieth-century French culture: surrealism (Breton, Clair, Léger), nouveau romane (Resnais, Duras, Robbe-Grillet), avant-garde (Sollers, Roche, Marker). One course. *Hedges*

**137. The French Film.** Evolution of techniques and styles from 1895 to the present. Fourteen directors from the silent (Méliès, Dulac, Buñuel) as well as from the sound era (Renoir, Carne, Truffaut). One course. *Hedges*

**141S, 142S. French Literature.** Topics to be announced. Open to juniors and seniors. Two courses. *Staff*

**152. André Gide: the Art of Fiction and Autobiography.** Gide's major works and his use of Greek myths with a comparative study of these myths in English and German literatures. Readings in French or English. One course. *Staff*

**191, 192. Independent Study.** Directed reading and research. Open only to qualified juniors by consent of instructor and the Director of Undergraduate Studies. Two courses. *Staff*

**193, 194. Independent Study.** Directed reading and research. Open only to qualified seniors by consent of the instructor and of the Director of Undergraduate Studies. Two courses. *Staff*

**213. French Literature of the Seventeenth Century.** The Baroque and the Classical: form and meaning in the plays of Corneille, Racine, and Molière. Readings in baroque and précieuse poetry. (Also listed under Medieval and Renaissance Studies.) One course. *Staff*

**214. The "Moralistes" of the Seventeenth Century.** Rise of modernity. Form and meaning in the works of Descartes, Pascal, La Rochefoucauld, La Fontaine, La Bruyère, Fénelon, and Mme. de Sévigné. (Also listed under Medieval and Renaissance Studies.) One course. *Staff*

**217. French Symbolism.** Poetry and theories of Baudelaire, Mallarmé, and Rimbaud; Decadence; Lautréamont, and Laforgue. One course. *Staff*

**219. Old French Literature.** An introduction to the reading of medieval French literary texts. (Also listed under Linguistics and under Medieval and Renaissance Studies.) One course. *Vincent*

**220. French Pre-Romantic and Romantic Poetry.** Chénier, Vigny, Lamartine, Musset, Hugo, and Nerval. One course. *Niess*

**221, 222. The Nineteenth-Century French Novel.** First semester: Romanticism and Romantic Realism, studied especially in the works of Chateaubriand,

Stendhal, and Balzac. Second semester: Realism and Naturalism, with special emphasis on Flaubert and Zola. Two courses. *Niess*

**225. French Prose of the Sixteenth Century.** Readings principally from Rabelais, Marguerite de Navarre, and Montaigne. (Also listed under Medieval and Renaissance Studies.) One course. *Tetel*

**226S. Topics in Renaissance Poetry.** (Also listed under Medieval and Renaissance Studies.) One course. *Tetel*

**228. French Poetry of the Twentieth Century.** In the wake of symbolism: Valéry and Claudel; poetry as ritual: Péguy; Apollinaire and surrealist poetry; the contemporary movement: Michaux, Char, Saint-John Perse. One course. *Staff*

**233. Contemporary French Theatre.** A study of dramatic theory; the art of the leading directors; and the major texts of Claudel, Giraudoux, Anouilh, Sartre, Beckett, Ionesco, and Genet. One course. *Staff*

**234. Proust.** A study of *A la recherche du temps perdu*. The thematic structure and the aesthetics of the work. One course. *Staff*

**241, 242. French Literature of the Eighteenth Century.** First semester: the Enlightenment, including Montesquieu, Voltaire, Diderot, Rousseau, and the *Encyclopédie*. Second semester: the development of literary forms, with emphasis on the theater and the novel. Two courses. *Stewart*

**245, 246. French Literature of the Twentieth Century.** First semester: to 1935, emphasis on Gide, Mauriac, and Malraux. Second semester: after 1935, emphasis on Sartre, Camus, and the *nouveau roman*. Two courses. *Cordle*

## ITALIAN

### Literature in English Translation

**141, 142. Masterworks of Italian Literature.** First semester: from the origins to the Baroque. (Also listed under Medieval and Renaissance Studies.) Second semester: Ottocento and Novecento. Two courses. *Caserta*

**284. Dante.** (See listing below under Italian Literature.) *Caserta*

**285. Dante.** The *Purgatorio* and the *Paradiso* in the light of Dante's cultural world. Special attention will be given to the poetic significance of the *Commedia*. Prerequisite: Italian 284 or equivalent. One course. *Caserta*

### Language and Civilization

**1-2. Elementary Italian.** Understanding, speaking, reading, and writing Italian. Language laboratory available for recording-listening practice. Two courses. *Caserta and staff*

**63. Intermediate Italian.** Grammar review; reading; oral practice, including laboratory experience. One course. *Caserta and staff*

**74. Intermediate Readings in Modern Italian.** Readings, discussion, composition, listening practice. One course. *Caserta and staff*

**100. Spoken Italian.** Intensive instruction in contemporary Italian using selected topics and readings to build vocabulary and to provide practice in structural patterns. One course. *Caserta*

**129. Modern Italy.** Political, social, economic, and cultural problems in Italian history from 1861 to the present day. One course. *Caserta*

**181. Intensive Italian.** An introduction to the language. Prerequisite: four semesters of another foreign language or consent of instructor. One course. *Caserta*

## Literature

**182. Intensive Italian.** Readings in modern literature: analysis and discussion. Prerequisite: Italian 181 or consent of instructor. One course. *Caserta*

**183, 184. Readings in Italian Literature.** Historical and critical analysis. First semester: Dante, Petrarch, Boccaccio, and the Humanists. (Also listed under Medieval and Renaissance Studies.) Second semester: Foscolo, Manzoni, Leopardi, and Verga. Conducted in Italian. Two courses. *Caserta*

**191, 192. Independent Study.** Directed reading and research. Open only to qualified juniors by consent of instructor and of the Director of Undergraduate Studies. Two courses. *Staff*

**193, 194. Independent Study.** Directed reading and research. Open only to qualified seniors by consent of instructor and the Director of Undergraduate Studies. Two courses. *Staff*

**283. Italian Novel of the Novecento.** Representative novelists from Svevo to the most recent writers. One course. *Caserta*

**284. Dante.** *La Vita Nuova* and a close reading of the *Inferno*. Conducted in English. Reading in Italian or English. (Also listed under Medieval and Renaissance Studies.) One course. *Caserta*

**285. Dante.** The *Purgatorio* and the *Paradiso* in the light of Dante's cultural world. Special attention will be given to the poetic significance of the *Commedia*. Prerequisite: Italian 284 or equivalent. (Also listed under Medieval and Renaissance Studies.) One course. *Caserta*

**288. The Renaissance.** Petrarch, Boccaccio, and Ariosto. (Also listed under Medieval and Renaissance Studies.) One course. *Tetel*

## PORTUGUESE

### Language and Civilization

**102. Brazilian Civilization.** Selected topics in history, culture, people, and institutions. Conducted in English. One course. *Miller*

**181. Brazilian Portuguese.** An intensive introduction to the language. Prerequisite: four semesters of another foreign language or consent of instructor. One course. *Miller*

**185, 186. Conversation.** Practice in spoken Brazilian Portuguese. Prerequisite: Portuguese 182 or consent of instructor. Two courses. *Miller*

### Literature

**182. Contemporary Brazilian Theater.** Authors studied include Jorge Andrade, Ariano Suassuna, and Dias Gomes. Prerequisite: Portuguese 181 or consent of instructor. One course. *Miller*

**183. Readings in Modern Brazilian Literature.** Prerequisite: Portuguese 182 or consent of instructor. One course. *Miller*

**184. Literature of the Explorations: Asia, Africa, Latin America.** Prerequisite: Portuguese 182 or consent of instructor. One course. *Miller*

**191, 192. Independent Study.** Directed reading and research. Prerequisites: junior standing and consent of instructor and Director of Undergraduate Studies. Two courses. *Miller*

**193, 194. Independent Study.** Directed reading and research. Prerequisites: senior standing and consent of instructor and Director of Undergraduate Studies. Two courses. *Miller*

## SPANISH

### Literature in English Translation

**157. Latin American Literature.** Fictional and poetic works of the last thirty years that have made an impact on world literature. One course. *Fein*

### Language and Civilization

**1-2. Elementary Spanish.** Understanding, speaking, reading, and writing Spanish. Language laboratory available for recording-listening practice. Two courses. *Miller and staff*

**63. Intermediate Spanish.** Grammar review; reading; oral practice, including laboratory experience. One course. *Miller and staff*

**74. Intermediate Readings in Modern Spanish.** Discussion, composition, listening practice. One course. *Miller and staff*

**76. Introductory Spanish Conversation.** Practice in everyday conversational Spanish. Prerequisite: Spanish 63 or equivalent. Enrollment: maximum fifteen students. One course. *Garci-Gómez and staff*

**105. Spanish in Medicine and Nursing.** Introduction to medical language situations emphasizing oral communication. Prerequisite: Spanish 76 or consent of instructor. One course. *Garci-Gómez*

**110. Spoken Spanish.** Study of colloquial Spanish; practice in pronunciation and conversation; emphasis on oral communication. Prerequisite: Spanish 76 or consent of instructor. One course. *Garci-Gómez and staff*

**111. Written Spanish.** Grammatical problems in composition and translations; introduction to the techniques of literary and professional styles. One course. *Pérez and staff*

**150T. Tutorial in Composition and Syntax.** Half-course. *Staff*

**153S, 154S. Spanish Language: Peninsular or American.** Topics to be announced. Two courses. *Staff*

**164. Topics of Spanish Civilization.** A humanistic study of Spain as a nation through its history, culture, people, and institutions. One course. *Staff*

**176S. Advanced Conversation.** This course is designed to develop facility of expression through constant drill on vocabulary and conversational idiom. Prerequisite: Spanish 100 or consent of instructor. One course. *Staff*

**181. Intensive Spanish.** An introduction to language. Modern readings. Prerequisite: four semesters of another foreign language or consent of instructor. One course. *Miller*

**182. Readings in Spanish American Literature.** Prerequisite: Spanish 181 or consent of instructor. One course. *Miller*



**257. History of the Spanish Language.** Formation and development. Internal forces and external contributions. (Also listed under Linguistics and under Medieval and Renaissance Studies.) One course. *Garcí-Gómez*

## Literature

**70, 71.** (These numbers represent one or two course credits for advanced placement in literature.)

**101, 102. Introduction to Literature and Civilization.** Literature, art, and history. First semester: Middle Ages through the eighteenth century. Second semester: nineteenth and twentieth centuries. Two courses. *Garcí-Gómez and staff*

**103S, 104S. Discussion of Readings.** Selected topics. Open only to freshmen and sophomores. Two courses. *Staff*

**106. Spanish American Short Fiction.** Novelettes and short stories of the twentieth century. One course. *Fein*

**107S. Introduction to Spanish American Literature and Civilization.** Literature, art, institutions, and film. One course. *Pérez*

**109S. Spanish Storytellers and Fabulists.** Selected works from Spanish short stories and fables; discussions of the heroic, religious, superstitious, romantic, and folkloric tradition. One course. *Garcí-Gómez*

**112S. Nobel Prizes in Hispanic Literature.** National and international context. Emphasis on Aleixandre, Asturias, and Neruda. One course. *Pérez*

**117S. Spanish Traditional Poetry.** The Spanish *Romancero*; ballads and other forms of popular poetry. (Also listed under Medieval and Renaissance Studies.) One course. *Garcí-Gómez*

**141S, 142S. Spanish Literature.** Topics to be announced. Open to juniors and seniors. Two courses. *Staff*

**156. The Spanish American Novel.** Masterworks of the nineteenth and twentieth centuries. One course. *Fein*

**158. Spanish American Colonial and Nineteenth-Century Literature.** Chronicles of discovery and conquest, seventeenth-century prose, poetry, and drama. Romanticism and the Gaucho tradition. One course. *Staff*

**161. Spanish Literature of the Renaissance and the Baroque.** Selected works of the sixteenth and seventeenth centuries with attention to their reflection of social, religious, and political ideas. (Also listed under Medieval and Renaissance Studies.) One course. *Miller or Wardropper*

**162. The Romantic Movement.** Principal manifestations of Romanticism in Hispanic literature; poetry (Becquer, Espronceda, Rosalia de Castro), drama (Rivas, Zorrilla), and the novel (Isaacs, Marmol). One course. *Pérez*

**163. The Generation of 1898.** Selected works by Unamuno, Baroja, Azorín, Valle-Incán, and Machado. One course. *Osuna*

**165S. Major Spanish Authors.** Textual studies; methods of literary interpretation and criticism. One course. *Wardropper*

**166. Nineteenth Century Prose Fiction.** Major forms in Spain and Spanish America: Clarín, Blest, Gana, Cambaceres, Galdós, and others. One course. *Pérez*

**167. Golden Age Literature: Cervantes.** Emphasis on the *Quijote*. (Also listed under Medieval and Renaissance Studies.) One course. *Staff*

**169. Literature of Contemporary Spain.** A sociological approach to the novel, theater, and poetry: Goytisolo, Buero Vallejo, Sastre, Arrabal, Celaya, and Otero (a sociological approach to the study of literature). One course. *Osuna*

**170. The Picaresque Novel.** *Lazarillo*, selections from Alemán's *Guzmán de Alfarache*, Quevedo's *Buscón*, and Cervantes' *Novelas ejemplares*. Social and religious satire; comparative analysis of style; portrayal of the delinquent protagonist. (Also listed under Medieval and Renaissance Studies.) One course. *Garci-Gómez*

**191, 192. Independent Study.** Directed reading and research. Open only to qualified juniors by consent of instructor and Director of Undergraduate Studies. Two courses.

**193, 194. Independent Study.** Directed reading and research. Open only to qualified seniors by consent of instructor and Director of Undergraduate Studies. Two courses.

**251. The Origins of Spanish Prose Fiction.** Selected examples of the principal genres of the romance and the novel: *Amadís de Gaula*, Diego de San Pedro's *Lacárcel de amor*, the *Abencerraje*, the *Lazarillo*, Montemayor's *Diana*. (Also listed under Medieval and Renaissance Studies.) One course. *Wardropper*

**252S. Spanish Lyric Poetry Before 1700.** Selected poems of the Middle Ages, Renaissance, and Baroque. Special emphasis on the *Razón de amor*, *la poesía de tipo tradicional*, and *Santillana*; on Garcilaso, San Juan de la Cruz, Fray Luis de León, and Herrera; on Góngora and Quevedo. (Also listed under Medieval and Renaissance Studies.) One course. *Wardropper*

**253. The Origins of Spanish Theatre.** Evolution of the Spanish theater from the *Auto de los Reyes Magos* (twelfth century) to the end of the sixteenth century. The idea of the theater as dramatic poetry will be stressed; close reading texts by Gómez Manrique, Encina, Gil Vicente, Torres Naharro, Lope de Rueda, Juan de la Cueva. (Also listed under Medieval and Renaissance Studies.) One course. *Wardropper*

**255, 256. Modern and Contemporary Spanish American Literature.** First semester: poetry from *Modernismo* to the present. Second semester: twentieth-century fiction. Two courses. *Fein*

**257. History of the Spanish Language.** Formation and development. Internal forces and external contributions. (Also listed under Linguistics and under Medieval and Renaissance Studies.) One course. *Garci-Gómez*

**258. Medieval Literature.** An introduction to selected authors and works. One course. *Garci-Gómez*

**260. Origins and Development of Spanish Romanticism.** Representative authors, including Espronceda, Rivas, Zorilla, Bécquer, and Rosalía de Castro, with a stress on drama and poetry. (Also listed under Medieval and Renaissance Studies.) One course. *Osuna*

**261. Nineteenth-Century Novel.** A study of literary trends in the last half of the nineteenth century. Readings will be selected from the novels of Valera, Pereda, Galdós, Pardo Bazán, Blasco Ibanez, and their contemporaries. One course. *Staff*

**262. The Theater of Galdós.** A selection of his plays. One course. *Osuna*

**265. Cervantes.** The life and thought of Cervantes with special emphasis on his *Quijote*. (Also listed under Medieval and Renaissance Studies.) One course. *Wardropper*

**266. Drama of the Golden Age.** The chief Spanish dramatists of the seventeenth century with readings of representative plays of this period. (Also listed under Medieval and Renaissance Studies.) One course. *Wardropper*

**270. The Literature of Eighteenth-Century Spain.** Cultural, political, social, and historical aspects of the works of Feijoo, Cadalso, Jovellanos, L.F. de Moratín, Ramón de la Cruz, Meléndez Valdés, and the fabulists. One course. *Osuna*

**275. Modern Spanish Poetry.** Juan Ramón Jiménez, Unamuno, Antonio Machado, the Generation of 1927, and the contemporary poets. One course. *Osuna*

**276. Modern Spanish Drama.** The theater of Benavente, Valle-Inclán, Lorca, Casona, Buero Vallejo, Sastre, and Arrabal. One course. *Osuna*

**277. Modern Spanish Novel.** From the Generation of 1898 to the present. One course. *Osuna*

## ROMANCE LANGUAGES

### Literature in English Translation

**160. An Approach to Comedy.** Nature, purpose, and effect of comedy in the theater. Readings from the classics (Aristophanes, Plautus, Terence), the Renaissance (Machiavelli, Shakespeare, Molière, Lope de Vega), the Restoration and the twentieth century. One course. *Wardropper*

### Language

**218. The Teaching of Romance Languages.** Evaluation of objectives and methods; practical problems involved in teaching these languages on the elementary, secondary, and college level; analysis of textbooks, special foreign language programs, audiovisual aids, and tests. One course. *Hull*

## DEPARTMENTAL MAJOR IN FRENCH OR SPANISH

*Prerequisite.* French or Spanish 74 or 76.

*Major Requirements.* A total of eight courses (above 74 or 76), no fewer than two literature courses, and no fewer than two language courses.

*Study Abroad.* No more than two courses per semester and one course per summer count toward the major.

In order to give perspective to a student's program, majors in French or Spanish will normally select, with the approval of the major adviser, appropriate courses from such fields as: (1) other languages and literatures; (2) history; (3) philosophy; (4) appreciation courses in music and art; and (5) linguistics.

## Slavic Languages and Literatures

Professor Krynski, *Chairman*; Associate Professor Jezierski, *Director of Undergraduate Studies and Supervisor of Language Instruction*; Lecturers Sagátov and Davis

**1, 2. Elementary Russian.** Introduction to understanding, speaking, reading, and writing. Audiolingual techniques are combined with required recording-listening practice in the language laboratory. Two courses. *Staff*

**63, 64. Intermediate Russian.** Intensive classroom and laboratory practice in spoken and written patterns. Reading in contemporary literature. Prerequisite: Russian 1,2, or two years of high school Russian. Two courses. *Staff*

**101, 102. Russian Literature and Culture Through the Nineteenth Century.** Prose, poetry, and drama with special attention to later periods. Readings in English (from *The Igor Tale* to *Blok*). Two courses. *Jezierski*

**105. The Russian Theatre and Drama.** Russian drama from its beginnings to the present. Readings in English or Russian. (Also listed as Drama 161.) One course. *Jezierski*

**106S. Russian and Polish Drama of the Nineteenth and Early Twentieth Centuries.** Russian plays by Griboedov, Pushkin, Gogol, Turgenev, Chekhov, Gorky; Polish plays by Mickiewicz, Krasinski, Wyspianski. History of Russian and Polish theatre. (Also listed as Drama 162S.) One course. *Jezierski or Krynski*

**119. Introduction to Russian Literature of the Nineteenth Century.** Conducted in Russian. Prerequisite: Russian 63, 64 or equivalent. One course. *Staff*

**120. Introduction to Russian Literature of the Twentieth Century.** Conducted in Russian. Prerequisite: Russian 119. One course. *Staff*

**119P, 120P. Preceptorial.** Elective preceptorials for students enrolled in Russian 119, 120. *Staff*

**124. Masters of Russian Short Fiction.** Pushkin, Gogol, Turgenev, Tolstoy, Dostoevsky, Chekhov, Babel, and others. Readings in English. One course. *Jezierski*

**161. Introduction to the Russian Novel.** Outstanding works of Lermontov, Gogol, Turgenev, Goncharov, Tolstoy. Readings in English. One course. *Krynski*

**162. Introduction to the Russian Novel.** Outstanding works of Dostoevsky, Bely, Sologub, Bunin, Gorky. Readings in English. One course. *Krynski*

**174. The Poles: Literature and Culture, 1940-1970.** Culture of Poland; representative literary masterpieces. Emphasis on Western literary avant-garde and Soviet political influences; Jewish themes. Readings in English. One course. *Krynski*

**174P. Preceptorial.** Elective preceptorial for students enrolled in Slavic Language and Literatures 174. *Krynski*

**175S. Leo Tolstoy.** Introduction to life and works. Readings in English will include *War and Peace*, *Anna Karenina*, the shorter fiction, dramatic works, and essays. Tolstoy's impact on the literature and thought of today, in and outside of Russia. One course. *Jezierski*

**176. Fyodor Dostoevsky.** Introduction to life and works. Emphasis on his relevance to today's world. Readings in English of major works; close study of *Crime and Punishment*, *The Idiot*, and *The Brothers Karamazov*. Historical overview of critical reaction in Russia and abroad. One course. *Jezierski*

**177. Introduction to the World of Chekhov.** Close scrutiny of selected prose and dramatic works of a Russian precursor of the modern sensibility. Readings in English. One course. *Jezierski*

**177P. Preceptorial.** Elective preceptorial for students enrolled in Slavic Languages and Literature 177. *Jezierski*



**180. Selected Masterpieces of Postrevolutionary Russian Literature.** Poetry, drama, prose of Mayakovsky, Babel, Zamyatin, Pilnyak, Solzhenitsyn, Sinyavsky and others. Emphasis on the 1920s and the post-Stalinist period. One course. *Krynski*

**183. Slavic Drama and Theatre of the Twentieth Century.** Russian, Polish, and Czech plays from the beginning of the century through the mid-seventies: Chekhov, Mayakovsky, Evreinov, Witkiewicz, Gombrowicz, Mrozek, Rozewicz, and Capek. Theatrical theories of Meyerhold, Vakhtangov, Tairov, Grotowski, and others. Slavic avant-garde developments, especially of the last two decades, in the context of Western European "theatre of the absurd." Readings in English, or, if qualified, in Russian or Polish. (Also listed as Drama 163.) One course. *Krynski*

**184. The Jews in Russian and Polish Literature Since 1917.** Jewish themes and protagonists in the works of leading writers of Russia and Poland, both Jewish and non-Jewish. Historical background of Jews and their role in the early stages of the Revolution and the dissident movement after Stalin's death. Readings in English, or if qualified, in Russian or Polish. One course. *Krynski*

**185. Vladimir Nabokov.** The Russian and English novels, short fiction, plays, poetry, and criticism of Vladimir Nabokov. Readings in English. Qualified students may do some readings in Russian. One course. *Jezierski*

**188. Solzhenitsyn and the World of Soviet Concentration Camps.** The major works of Alexander Solzhenitsyn with emphasis on concentration camp writings. Background readings by other authors and scholars, Russian and Western. One course. *Krynski*

**190. Russian Nobel Prize Winners.** The fiction of Bunin, Sholokhov, Pasternak, and Solzhenitsyn. Readings in English, or, if qualified, in Russian. One course. *Krynski*

**191, 192. Independent Study.** Directed reading and research. Open only to qualified students by consent of Director of Undergraduate Studies. Two courses. *Staff*

**193, 194. Independent Study.** Directed reading and research for qualified seniors. Prerequisite: consent of Director of Undergraduate Studies. Two courses. *Staff*

**195. Advanced Russian.** Review of grammar with an emphasis on the refinement of oral and written language skills. Prerequisite: Russian 120 or consent of instructor. One course. *Staff*

**196. Readings in Modern Russian.** An intensive reading-conversation course based on contemporary Russian literary and Soviet press texts, emphasizing problems in Russian-English and English-Russian translation. Prerequisite: Russian 195 or consent of instructor. One course. *Staff*

### **For Seniors and Graduates**

**201, 202. Russian Novel of the Nineteenth Century.** First semester: 1830-1870. Second semester: 1870-1900. Prerequisite 161, 162 or equivalent. Two courses. *Krynski*

**205. The Structure of Polish in Relation to Russian.** Comparative and contrastive study of the two major Slavic languages. Emphasis on preparing students to read Polish literary texts. One course. *Krynski*

**206. Readings in Contemporary Polish Prose in the Original.** Stylistic analysis of aphoristic prose by Stanislaw Lec, philosophical allegories by Leszek

Kolakowski, and short stories by Slawomir Mrozek and Marek Hlasko. One course. *Krynski*

**207. Soviet Literature and Culture.** Literature since 1917. Readings in English from major works of prose, poetry, and drama. One course. *Jezierski*

**207P. Preceptorial.** Elective preceptorial for students enrolled in Slavic Languages and Literatures 207. *Jezierski*

**212. Pushkin.** Survey of life and works, his role as precursor of modern Russian literature. Readings in English and Russian. Prerequisite: Russian 101 or consent of instructor. One course. *Krynski*

**225S. Tolstoy.** *War and Peace* and other works. Prerequisite: Russian 175S or equivalent. One course. *Jezierski*

**227S. Gogol.** Life and works: short stories, dramas, and the novel. Readings in English or Russian. One course. *Jezierski*

**232. Dostoevsky.** Emphasis on *Brothers Karamazov* and the theory of the novel. Prerequisite: Russian 176 or equivalent. One course. *Jezierski*

**234. Modern Polish Literature.** Masterpieces of Polish literature since 1900. Emphasis on the avant-garde trends and on poetry, drama, and short prose genres. Prerequisite: three years of college Russian or one year of Polish. One course. *Krynski*

## DEPARTMENTAL MAJOR

*Prerequisites.* Russian 1, 2 and 63-64, or equivalent.

*Major Requirements.* A minimum of eight courses in the department. All majors must take the following courses: Russian 119, 120, 195, 196, plus four courses in literature.

Students contemplating graduate work may elect a more intensive program consisting of ten courses. A knowledge in depth of Russian literature or some knowledge of Polish language and/or literature will facilitate admission to graduate school and subsequent study in the field.

## Sociology

Professor Back, *Chairman*; Associate Professor Simpson, *Director of Undergraduate Studies*; Professors Kerckhoff, Maddox, McKinney, Myers, Palmore, Portes, Preiss, Roy, Smith, and Tiryakian; Associate Professors House, Hirschman, and Wilson; Assistant Professors Campbell and Rice

Understanding the nature of social relationships, groups, and organizations is essential to humane and rational action in an increasingly complex world. The Department of Sociology attempts to impart such understanding as one element of a liberal education. Undergraduate work in sociology, as in the other arts and sciences, does not prepare students for a specific vocation, but it is useful and adequate preparation for either employment or graduate study in any of the following areas: sociology and other social sciences, business, government and public service, and the professions of education, law, medicine, or social work.

The department and its offerings represent the diversity of topics and approaches in sociology, while also offering more concentrated work in certain areas, including deviant behavior (courses 120-123), population and ecology (141, 145, 243), family, sex roles, and socialization (150, 152, 158, 272, and 278), and others. In the major and in many courses, emphasis is placed on learning how to do sociology as well as on studying what others have done. Active involvement in the

learning process is also fostered through seminar courses, independent study, honors work and internship, or fieldwork experiences. The department offers both internship courses and encourages students to arrange individual internship experiences for which they receive independent study credit if the internship is coordinated with related academic study.

To provide a variety of educational experiences for the beginning student of sociology, the introductory course, *Introduction to Sociology*, has a variety of structures. In each, however, students learn basic approaches of sociology to social reality and some of the problems involved in observing, describing, and analyzing facets of social life.

**91. Introduction to Sociology.** Sections of limited enrollment (about thirty-five to fifty). One course. *Staff*

**91D. Introduction to Sociology.** Two lectures and one discussion section (no more than twenty students per section). One course. *Staff*

**91S. Introduction to Sociology.** Taught as a seminar, enrollment limited to twenty per class. One course. *Staff*

**101. Contemporary American Society.** Social trends and social problems and their effects on individuals and society. Urbanization; bureaucracy; distribution of wealth, income, and power; status of minorities. One course. *Hirschman*

## SOCIAL DIFFERENTIATION

**111. Inequality in America.** Differences in social position in the United States as they relate to income, prestige, and power. Primary focus on the process of achievement, including level of education, and occupational position, while controlling for race, sex, and age. One course. *Evers or Kerckhoff*

**116. Black and White Relations in America.** The history and changing nature of interaction between Blacks and Whites, including the sources and consequences of discrimination, integration, and Black power. One course. *Staff*

## DEVIANCE

Sociology 120-122 are designed as a sequence, and might optimally be taken in that order, with Sociology 120 being recommended preparation for 121, 122, and 123. However, there are no required prerequisites.

**120. Perspectives on Deviant Behavior.** Development and distribution of deviant social behavior, treating such topics as social disorganization, stress and strain, cultural and labeling theories in relation to crime and delinquency, drug addiction, homosexuality, suicide, or others. (Not open to students who have taken Sociology 143.) One course. *Preiss or Rice*

**121. Law Enforcement and Judicial Systems.** Treatment of deviant behavior by police, prosecutors, and courts. Problems of justice, efficiency, and ethics. Cross-cultural comparisons. One course. *Preiss or Rice*

**122. Punishment and Treatment of Deviants.** Concepts of punishment and rehabilitation. Programs and facilities for deviants. Structure and operation of "total" institutions, such as prisons and hospitals. Problems of returning to family and community life. One course. *Preiss or Rice*

**123. Social Aspects of Mental Illness.** Theoretical and practical sociological contributions to problems of etiology, definition, law and treatment; comparisons

with other contributions; questions of public policy and programs. One course. *Back or Preiss*

## RESEARCH

Sociology 132 is recommended preparation for 130-level courses. However, there are no prerequisites.

**132. Introduction to Sociological Research.** Observation, measurement, analysis, and methods of presenting research findings. One course. *Hirschman or Rice*

**133. Basic Statistics for Sociologists.** Introduction to inferential and descriptive statistics, including measures of central tendency and dispersion, measures of association for nominal, ordinal, and interval scale variables, hypothesis testing, and parameter estimation. Emphasis on statistical analysis of sociological data, especially census and survey data. One course. *Hirschman*

**134. Uses of Sociology.** An analytic framework for understanding the ways sociology has been used, ethical issues and consequences. One course. *Campbell, Preiss, or Smith*

**138. History of Social Thought.** The ideas of Rousseau, Marx, Weber, Durkheim, and others in relation to the philosophy and science of the eighteenth, nineteenth, and twentieth centuries. One course. *Tiryakian or Wilson*

## POPULATION AND ECOLOGY

**140. Environment and Society.** Impact of technological and social change on sociological and environmental conditions. One course. *Myers or Smith*

**141. Population Problems and Policy.** Past, present, and future problems involving fertility, mortality, and population distribution. Assessment of public policies that influence population change. One course. *Back, Hirschman, or Myers*

**145. Urban Sociology.** Historical, demographic, and ecological materials are used to study urban society with respect to its institutions, interaction patterns, differentiation, integration, disorganization, and decentralization. Comparative Canadian material considered where feasible. One course. *Myers, Portes, or Smith*

## LIFE COURSE AND INSTITUTIONS

**150. The American Family.** The American family as an institutionalized group and its relationship with other institutions; the social psychology of family relations; variations by social class and ethnic group. One course. *Kerckhoff, Roy, or Simpson*

**151. Sociology of Religion.** The religious factor in modern society and the social factor in modern religion. Major sociological theories and marginal religious groupings. One course. *Tiryakian or Wilson*

**152. Sociology of Education.** Structure and operation of formal educational institutions in Western society and their effects on the social structure. Equality of opportunity, family-school, community-school, student-school relations, and peer influences in the school. One course. *Campbell, Kerckhoff, or Roy*

**153. The Sociology of Sport.** The affect of sports involvement on the interaction between people, their self-conception, and their adjustment to the roles they play inside and outside sport. Relation of sport as an institution to the family, to education, economics, and politics. One course. *Wilson*



**154. The Sociology of the Arts.** An analysis of the social relations of the world of the arts (painting and sculpture, music, and literature) with emphasis upon creative artists, art publics, art organizations, and art works as they function in their social-cultural milieu. One course. *Back or Tiryakian*

**155. Sociology of Work.** Study of social organizations of work activities, of the human experiences and group relationships involved. Special focus on management-employee conflict and cooperation. One course. *Roy*

**156. The Changing Roles of Men and Women: Two-Career Families.** (Also listed as Interdisciplinary Course 156 and Political Science 156.) One course. *J. O'Barr*

**158. Sex Roles and Society.** Nature and acquisition of sex roles. Cross-cultural variations. Developing nature of sex roles in American society. One course. *McGee*

**161. Ageing and Death.** Basic theories and demography of human ageing; social problems caused by increased longevity; social-psychological factors in attitudes toward death, mortality, accidental death, suicide, and murder. Fall. One course. *Palmore*

**162. Health and Illness in Society.** Relations between patients and health professionals, and utilization of resources for health care. Fall. One course. *Back*

**165. Occupations and Career Development.** How occupations organize and control labor markets, define services, chart career lines, and develop and sustain occupational identities. Fall. One course. *Simpson or Wilson*

**167. Political Sociology.** Politics as social behavior involving change in institutions and structures; current national and local issues. One course. *House, Portes, or Preiss*

## SOCIAL ISSUES AND PROCEDURES

**170. The Sociology of Mass Communication.** An analysis of the role of radio, the press, magazines, movies, and television in modern societies. An examination of the selective audiences, content characteristics, controlling elements, and organizational structure of the various media of mass communication. Comparative Canadian material considered where feasible. One course. *Smith*

**172. Collective Behavior.** Rumor and contagion as general processes; collective expression such as riots, protests, and behavior in disaster. Focus on contemporary Western society. One course. *Portes or Kerckhoff*

**173. Social Movements.** Social movements as agents of change. Structure and development of protest groups. One course. *Wilson*

**176. Immigration and Ethnicity.** The settlement and adaptation in American society of immigrant groups, especially of older ethnic and new immigrant groups in the labor market. Internal colonialism, class segmentation, and the contribution of ethnic groups to dual labor markets. Fall. One course. *Portes*

**177. Sociology of Community.** Major theories of community in industrialized and developing countries. Attention given to Utopian communities. Includes field studies. Fall. One course. *Simpson or Tiryakian*

**178. Colonialism and Neo-Colonialism.** Ideological, structural, and socio-psychological dimensions of colonization and decolonization in the modern world, with special reference to sub-Sahara Africa. Spring. One course. *Tiryakian*

**179. Development of Third World Societies.** The interaction between advanced nations and the Third World. Topics include international migrations, urbanization, poverty, the theory of the state, and the conflict between immediate redistribution and long-term economic growth. Spring. One course. *Portes*

## AREA STUDIES

**184. Canada: Problems and Issues of an Advanced Industrial Society.** (Also listed as Interdisciplinary Course 184.) One course. *Preston and visiting lecturers*

**193, 194. Independent Study.** Prerequisite: consent of instructor. Two courses. *Staff*

**195S, 196S, 197S, 198S. Seminar in Special Topics.** Four courses. *Staff*

## For Seniors and Graduates

**201. Social Change.** Causes, indicators, and consequences. Classical and contemporary theorists Marx, Weber, Sorokin, Parsons, Lenski, and others. One course. *Staff*

**202. Social Organization.** Contrasting conceptions with emphasis on the sustenance and evolution of social arrangements. One course. *Staff*

**225. Medical Sociology.** Current issues in the organization, development and the utilization of resources for health care. One course. *Back or Maddox*

**230. Social Aspects of Aging and Death.** Theories of human aging; social problems caused by increased longevity, discrimination against the aged, retirement, widowhood, and other role losses. Social-psychological factors in mortality, accidental death, suicide, and murder. One course. *Palmore*

**234S. Political Economy of Development: Theories of Change in the Third World.** (Also listed as Anthropology 234S, History 234S, and Political Science 234S.) One course. *Bergquist, Pessar, Portes, Smith, and Valenzuela*

**241. Social Stratification.** The nature of hierarchical and vertical differentiation for the economic, political, and prestige structures in modern societies. The interrelationship of class, status, and power strata and their influence on social institutions, personality structure, and group and individual behavior. The transmission of inequality from one generation to the next. One course. *Campbell, Hirschman, or Roy*

**242. The Sociology of Occupations and Professions.** The social significance of work. Analysis of forces changing the contemporary occupational structure, typical career patterns of professions and occupations, and social organization of occupational groups. One course. *Roy or Simpson*

**243. Population Dynamics and Social Change.** Social scientific aspects of the determinants and consequences of population trends. One course. *Myers or Hirschman*

**244. Human Ecology and Urban Systems.** Origins and development of human ecology theory, growth of cities and urban systems, residential segregation of social classes and racial and ethnic groups. One course. *Hirschman, Myers, or Smith*

**246. Population Policy.** Formation, effect, and evaluation. Historical examples of mortality, fertility, migration, and distribution policies. The Malthusian and neo-Malthusian controversies. Psychological, sociological, demographic, and political background. (Also listed as Public Policy Studies 246.) One course. *Back*

**251. The Sociology of Modernization.** Theories and perspectives on the nature of modernization and modernity in Western and non-Western countries. One course. *Hirschman, Tiryakian, or Portes*

**254. Urbanization and Social Change.** Interactions between social structure and physical space in three contexts: (a) the re-emergence of cities in Medieval Europe; (b) the contemporary evolution of cities and their hinterlands in the United States; and (c) patterns of urbanization in the Third World. One course. *Portes*

**259. Religion and Social Change.** The role of religion in significant social changes in Western and non-Western societies; noninstitutional phenomena (charisma, prophecy, messianism, revivals, glossolalia). One course. *Tiryakian or Wilson*

**260. Science, Technology, and Society.** Science as a social phenomenon. Relations of science to technology and their articulation through public policy. Interaction of the institutions of science with other societal institutions. (Also listed as Psychology 260.) One course. *McKinney and Bevan*

**261. Science, Politics, and Government.** The structure and values of the scientific community, the mechanism and strategies of government, and their mutual interdependence in American society. (Also listed as Public Policy Studies 255 and Psychology 261.) One course. *Bevan and McKinney*

**272. The Socialization Process.** Mechanisms and variations in socialization by position in the social structure (class, race, urban-rural); contributions made by various socialization agencies (family, school, peer groups, mass media) in Western society. One course. *Kerckhoff*

**275. Social Structure and Personality.** Processes by which social structures and social change (including class, modernization, societal and organizational membership) affect individual attitudes and behaviors. Nature and effect of stress, alienation, and other forms of incongruence between individuals and social structures. One course. *Portes*

**276. Small Groups and Social Life.** A systems theoretical approach. Basic group processes including communication, integration, subgroup formation, specialization, hierarchy, and leadership; different types, contexts, and interrelations of groups. One course. *Back*

**278. Social Structure and the Life Cycle.** Relationship between age as a social characteristic and social interaction, with particular reference to adolescence and old age. One course. *Maddox*

**281. Seminar in Sociological Theory.** Development, convergence, and utilization of sociological theories. One course. *Tiryakian or Wilson*

**282S. Seminar on Canada.** Counts for the major only with the approval of the Director of Undergraduate Studies. See course description for Interdisciplinary Course 282S. (Also listed as Anthropology 282S, Economics 282S, History 282S, Political Science 282S, and under Canadian Studies.)

**291. Research Methods and Techniques I.** Principles and methods of collecting and utilizing questionnaire and survey data. Applications of methods, secondary analysis, laboratory and field experimentation, observation and other types of research. Prerequisite: Sociology 132 or 293 or equivalent. One course. *Portes or Smith*

**292. Research Methods and Techniques II.** Principles, methods, and applications of depth interviewing, participant observation, content and analysis, unob-

trusive measures, historical and archival analysis. Issues of reliability, validity, quantification, multiple methodologies, and the interrelationship of theory and method. One course. *Roy*

**293. Introductory Statistical Analysis.** Basic descriptive statistics, regression and correlation, t-tests and the analysis of variance, chi square techniques, and other topics. Stress on practical applications. Statistical computing using SPSS and other programs. One course. *Campbell or Rice*

**294. Intermediate Statistical Analysis.** The general linear model and its application in methods of multivariate statistical analysis: analysis of variance and covariance, multiple regression and path analysis, and log-linear models for categorical data. Statistical computing using SPSS and other programs. Prerequisite: Sociology 293 or equivalent. One course. *Campbell or Rice*

**295. Methodology in Sociology.** The nature of scientific method, as well as alternative paths to knowledge, as they apply to sociology. Conceptualization, hypothesis formation, and definition. The research process as a decision-making situation for both general research design and specific techniques. The process and logic of data analysis. Relations of theory and research are stressed. One course. *Back or Smith*

**298S, 299S. Seminar in Selected Topics.** Substantive, theoretical, or methodological topics. Two courses. *Staff*

## DEPARTMENTAL MAJOR

*Prerequisite.* Sociology 91.

*Major Requirements.* Seven courses in the department above 91, including Sociology 132 and either one 200-level course or one senior seminar.

A sociology major normally takes at least four related courses in the following departments: anthropology, economics, education, history, mathematics, political science, or psychology.

*Honors.* Qualified majors are encouraged to undertake work leading to graduation with distinction. A major with a *B+* average in sociology and a *B* average in all courses is eligible, though the Director of Undergraduate Studies may waive this requirement in special cases. To receive departmental honors a major must complete a paper involving significant independent research or scholarship and pass an oral examination on the paper conducted by a three-person committee, at least two of whom, including the chairman, must be members of the department. Normally, students will prepare the paper over the course of the senior year, working in close collaboration with their chairman and committee, and receiving on the average two course credits in independent study.

## Statistics

Statistics courses offered in several departments at Duke are classified according to function (Tracks) and level as follows: Track 1 includes statistical inference courses for nonstatisticians; Track 2, statistical inference courses for statisticians; Track 3, stochastic processes courses; and Track 4, stochastic communications theory courses. Within each track, courses are classified by level according to the amount of prerequisite statistical knowledge needed. First-level Track 1 courses, which are basic statistics courses for nonstatisticians, cover a certain core curriculum and have no formal statistical prerequisites. For further information on the statistics courses see *Statistics at Duke*, which is available on request from the Department of Mathematics.



## Twentieth-Century America Semester

The Twentieth-Century America Semester explores modern American society in a group of interrelated courses from the perspectives of history, literature, sociology, religion, and political thought. The program offers four courses in the fall term, of which participants must take at least three. Some twenty-five students are selected for the program; all undergraduates may apply.

This special program provides the student with the opportunities that come from relatively small classes (often of seminar format), a program of interrelated and mutually reinforcing courses, and close relationships with professors and stimulating fellow students.

For courses that the program has offered, see the descriptions under English 58, History 92, Sociology 101, Political Science 144S, and Religion 59. Further information and application forms may be obtained from the academic deans.

## Science, Society, and Human Values

This program is designed to allow a student to explore science, medicine, and technology from different perspectives in order to attain a comprehensive view of these subjects in social, historical, intellectual, and ethical terms. Participation in this program should enrich the professional understanding of the future scientist, physician, or engineer, and should broaden the appreciation of these activities for those who do not intend to pursue careers in these fields.

The courses which are part of the program have been divided, in terms of their contents, into three area groups: science, medicine, and technology. Each of these content groups is further divided according to the intellectual approach to the material taken in the particular courses. Some courses are analytical (from the perspectives of history, philosophy, or sociology), while others are ethically oriented and still others center on the processes of public policy development.

Each student completes at least five courses, selected from at least two area groups and including experiences with each of the intellectual approaches. A representative selection for a student interested particularly in medicine is illustrated below.

### AREA GROUPS

#### Science

History 158. The Rise of Modern Science. (*analysis approach*)

#### Medicine

Philosophy 118. Philosophical Issues in Medical Ethics. (*ethics approach*)

History 182. Development of Modern Medicine. (*analysis approach*)

Public Policy 157. Health Policy. (*policy approach*)

#### Technology

Engineering/Public Policy/Religion 174. Technology Assessment and Social Choice. (*policy approach*)

An essential part of a student's participation will be the preparation of a reflective essay on the insights and understandings gained through involvement in the program. There will also be special events and occasions of both an academic and social nature for all participants in the program.

## Eligibility and Procedure for Acceptance into the Program

Normally students enter the program between the completion of the first semester of the freshman year and the completion of the second semester of the junior year. The student should contact the Director of the program, who will consult with the student to ascertain a primary area interest (science, medicine, or

technology), and then will provide the student with an appropriate adviser. The student and the adviser will together draw up a course of study tailored to the student's particular interests and satisfying the program's requirements. All courses of study must be approved by the program's advisory committee. Upon successful completion of the course of study, the student will receive recognition on his or her transcript of participation in the program.

## University Courses

See *Distinguished Professor Courses*.

## Zoology

Professor Wainwright, *Chairman*; Professor Fluke, *Director of Undergraduate Studies*; Professors Bailey, Costlow, Gillham, Gregg, Klopfer, Livingstone, Nicklas, Schmidt-Nielsen, Tucker, Ward, and K. Wilbur; Adjunct Professor Schmidt-Koenig; Associate Professors Barber, Forward, Lundberg, McClay, Sutherland, Vogel, and H. Wilbur; Assistant Professors Nijhout, Rausher, and Storey; Instructors Grubb, Mahoney, Swift, and Wise

See *Biology* for listing of introductory courses in addition to Zoology 74L.

The *L* suffix on a zoology course number indicates that the course includes a laboratory.

In addition to those courses bearing the *S* suffix, the following zoology courses also fulfill the seminar-type learning experience: 120L, 180L, 204L, 216L, 218L, 222L, 224L, 258L, 262L.

### COURSES GIVEN ON THE DURHAM CAMPUS

**74L. Introductory Animal Diversity.** Structure, functions, and habits of animals; classification, evolutionary origins, and phylogenetic relationships of major extant groups. Open only to students intending majors in the natural sciences. One course. *Rausher*

**103L. Principles of Ecology.** Physical, chemical, and biological processes that determine the distribution and abundance of animals, emphasizing population dynamics, species interaction, biogeography, nutrient cycling, and energy flow through food webs. Prerequisites: introductory biology and Mathematics 31. Laboratory includes field work. One course. *H. Wilbur and Livingstone*

**108L. Developmental and Comparative Anatomy of Vertebrates.** The embryology, anatomy, and evolution of vertebrate organ systems. Laboratory twice weekly. Prerequisite: introductory biology. One course. *Lundberg*

**117. Introduction to Genetics.** The effects of heredity and environment upon the individual and the population. Readings and discussions dealing with human problems. Not intended for students whose professional goals are genetics or cell biology. Students may not receive credit for both Zoology 117 and 180 or Nursing 105. Prerequisite: introductory biology or consent of instructor. One course. *Ward*

**120L. Ornithology.** The classification, adaptations, and natural history of birds. Laboratory or field work twice weekly. Prerequisite: introductory biology; Zoology 108L is recommended. One course. *Bailey*

**129. Morphogenetic Systems.** Introduction to the experimental study of development. Gametogenesis and fertilization, formation of primary axes, interac-

tions of nucleus and cytoplasm, morphogenetic movements, embryonic induction, regeneration, energetics. Prerequisite: introductory biology. One course. *Gregg*

**135. Evolutionary Systematics.** Speciation and phylogeny in plants and animals: geographic and reproductive isolation, breeding systems, hybridization, homology, convergence, and extinction; techniques of classification. Complements Zoology 286. Prerequisite: introductory biology. (Also listed as Botany 135, Botany 235, and Zoology 235.) One course. *Bailey, Lundberg, and Stone (botany)*

**151L. Principles of Physiology.** Functional aspects of respiration, circulation, coordination, water balance, metabolism, thermoregulation, and responses to special environments. Fall term stresses physical principles; spring term, metabolic principles. Prerequisites: introductory biology and Chemistry 12. One course. *Tucker (fall), or Storey (spring)*

**160. Principles of Cell Biology.** Structure and function of organelles, metabolism, and regulatory mechanisms. Prerequisites: introductory biology and Chemistry 12. One course. *McClay*

**160L. Principles of Cell Biology.** See Zoology 160. Includes laboratory. One course. *McClay and staff*

**175L. Invertebrate Zoology.** Morphology, physiology, and adaptations to environment. Laboratory twice weekly; field trips. Not open to students who have had Zoology 173, 174, 176L, 274, or 275. Prerequisite: introductory biology. One course. *Nijhout*

**178. Functional Morphology.** Structural basis of function of tissues, organs, and organisms in various phyla. Not open to students who have had Zoology 173, 174, or 179. Prerequisite: Zoology 108, or 175, or 176, or by consent of instructor. One course. *Wainwright*

**179T. Tutorial in Functional Morphology.** See Zoology 178. Essays and oral reports. Consent of instructor required. Not open to students who have had Zoology 173, 174, or 178. One course. *Wainwright*

**180. Principles of Genetics.** Structure and properties of genes and chromosomes in individual organisms and in populations. Prerequisites: introductory biology, Chemistry 12, and Mathematics 31, or equivalents. (Also listed as Botany 180, Botany 280, and Zoology 280, and under the University Program in Genetics.) One course. *Antonovics (botany), Boynton (botany), and Gillham*

**180L. Principles of Genetics.** See Zoology 180. Includes laboratory instruction. Prerequisites: same as Zoology 180. One course. *Antonovics (botany), Boynton (botany), Gillham, and Ward*

**191, 192. Independent Study.** For junior and senior majors with consent of the Director of Undergraduate Studies and the supervising instructor. Three courses of 191, 192, 193T, and 194T maximum. Credit to be arranged. *Staff*

**193T, 194T. Tutorial.** For junior and senior majors with consent of the Director of Undergraduate Studies and the supervising instructor. Three courses of 191, 192, 193T, and 194T maximum. Credit to be arranged. *Staff*

**197, 198. Undergraduate Colloquium.** Does not satisfy major or distributional requirements. One course maximum except with consent of Director of Undergraduate Studies. *Staff*

## For Seniors and Graduates

**201L. Animal Behavior.** Physiological and developmental studies. Laboratory emphasizes research projects. Prerequisites: physiology, genetics, or consent of instructor; evolution recommended. One course. *Klopper*

**204L. Population and Community Ecology.** Theoretical aspects of population dynamics and of systems of interacting species. Individual projects and reports, several weekend field trips. Prerequisites: calculus, introductory ecology, and consent of instructor. One course. *H. Wilbur*

**205. Foundations of Theoretical Biology.** Logic, mathematics, and philosophy in the biological sciences. Formal and empirical roles of hypotheses, definitions, deductions, classifications, orderings and measurements, as exemplified by simple theoretical systems and their biological models. Selected philosophical issues of biological thought. Prerequisites: introductory biology and mathematics, or consent of instructor. One course. *Gregg*

**216L. Limnology.** Lakes, ponds, and streams; their origin, development, geochemistry, energy balance, productivity, and the dynamics of plant and animal communities. Laboratory includes field trips. Offered biennially. Prerequisites: introductory biology, Chemistry 12, physics, and Mathematics 32, or consent of instructor. One course. *Livingstone*

**218L. Pleistocene Paleobiology.** Causes and consequences of climatic change: human, climatic, and biogeographic factors in history of vegetation; effects of environmental change on evolutionary strategies, ecosystem development, and human culture. Includes discussion, oral reports, study of lake sediments including pollen analysis. Prerequisites: one year of biology or geology and consent of instructor. One course. *Livingstone*

**222L. Entomology.** The biology of insects: diversity, development, physiology, and ecology. Laboratory twice weekly; field trips. Prerequisite: introductory biology. One course. *Nijhout*

**224L. Herpetology.** Classification, evolution, zoogeography, and natural history of amphibians and reptiles. Lectures, demonstrations, and readings on world fauna; laboratory and field work on Carolina fauna. Prerequisite: Zoology 108L and consent of instructor; introductory ecology recommended. One course. *Bailey*

**226L. Ichthyology.** Diversity, evolution, natural history, and ecology of fishes. Laboratory includes overnight field trips to marine and freshwater habitats. Prerequisites: introductory biology and Zoology 108L. One course. *Lundberg*

**239S. Biogeography.** Old and new distributional concepts of animals and plants involving physical geography, geology, paleontology, systematics, evolution, population dynamics, and dispersal. Prerequisite: consent of instructor. One course. *Bailey*

**244. Principles of Immunology.** An introduction to the molecular and cellular basis of the immune response. Topics include anatomy of the lymphoid system, lymphocyte biology, antigen-antibody interactions, humoral and cellular effector mechanisms, and control of immune responses. Prerequisites: Zoology 160, Chemistry 152, or consent of instructor. (Also listed as Microbiology 244.) One course. *Dawson and staff*

**245. Radiation Biology.** Actions of ionizing and excitational radiations on life processes; biological use of radioactive tracers; nucleonics. Prerequisites: physics, Mathematics 32, and Chemistry 12. One course. *Fluke*



**247S. Photobiology.** Effects of visible light and of ultraviolet and near ultraviolet radiation in living systems: repair processes, quantum processes, physical optics. Prerequisites: college physics and introductory biology. One course. *Fluke*

**249. Biomechanics.** Principles of fluid and solid mechanics applied to biological systems. Prerequisites: Physics 51 and Mathematics 31 or equivalent. One course. *Vogel and Wainwright*

**252. Comparative Physiology.** The physiological mechanisms of animals studied on a comparative basis. Prerequisite: Zoology 151L or equivalent. One course. *Schmidt-Nielsen*

**258L. Laboratory Research Methods.** Radioactivity and scintillation counting, spectrophotometry and enzyme kinetics, protein and cell component separatory methods, and other analytical methods, according to individual research interests. Prerequisite: consent of instructor. One course. *K. Wilbur, Fluke, and staff*

**260. Advanced Cell Biology.** Structural and functional organization of cells and their components; current research problems and prospects. Prerequisites: introductory cell biology (or genetics and consent of instructor); introductory biochemistry recommended (may be concurrent). One course. *Nicklas, K. Wilbur, and staff*

**262L. Cytological Materials and Methods.** Cytological analysis, with emphasis on chromosome studies using advanced optical, cytochemical, and experimental techniques. Prerequisite: Zoology 260 or equivalent. One course. *Nicklas*

**265S, 266S. Seminar in Chromosome Biology.** Current research in chromosome structure and function, mitosis, and meiosis. Prerequisites: a course in cell biology or genetics and consent of instructor. (Also listed as Anatomy 265S, 266S.) Two half-courses. *Moses (anatomy) and Nicklas*

**283. Extrachromosomal Inheritance.** Genetics, biochemistry, and molecular biology of the organelles of eukaryotic cells, bacterial plasmids and episomes, and cellular symbionts. Emphasis on recent literature. Prerequisite: introductory genetics. (Also listed as Botany 283, and under the University Program in Genetics.) One course. *Boynton (botany) and Gillham*

**286. Evolutionary Mechanisms.** Population ecology and population genetics of plants and animals. Fitness concepts, life history evolution, mating systems, genetic divergence, and causes and maintenance of genetic diversity. Complements Zoology 135. Prerequisite: genetics. (Also listed as Botany 286, and under the University Program in Genetics.) One course. *Antonovics (botany) and H. Wilbur*

**288S. The Cell in Development and Heredity.** A seminar on topics of current interest and controversy. Prerequisites: a course in genetics and consent of instructor. (Also listed as Anatomy 288S and under the University Program in Genetics.) Half-course. *Counce (anatomy)*

**289S. Problems in Genetics.** Selected topics in current research. Prerequisite: introductory genetics and consent of instructor. (Also listed under the University Program in Genetics.) One course. *Gillham*

**295S, 296S. Seminar.** Topics, instructors, and course credits announced each semester. *Staff*

## COURSES GIVEN AT BEAUFORT

(Also listed under Marine Sciences.)

**114L. Introduction to Biological Oceanography.** Physical, chemical, and biological processes of the oceans, emphasizing special adaptations for life in the sea and factors controlling distribution and abundance of organisms. Laboratory emphasis. Not open to students who have had Geology 53 or Botany 53. Prerequisite: introductory biology. One and one-half courses. *Smith (visiting summer faculty)*

**150L. Physiology of Marine Animals.** Comparative physiology including ecological and behavioral adaptations. Students may not receive credit for both Zoology 150L and 250L. Prerequisites: introductory biology and Chemistry 12. One course. *Forward*

**169L. Ecological Oceanography.** Dynamics of marine communities in the context of current ecological theory. Life history strategies, competition, predation, diversity, and stability; detailed considerations of benthic and pelagic communities. Students may not receive credit for both Zoology 103L and 169L.) Prerequisites: introductory biology and Mathematics 31. (Also listed as Botany 169L and Geology 169.) One course. *Sutherland*

**176L. Marine Invertebrate Zoology.** Structure, functions, and development of invertebrates collected from estuarine and marine habitats. Not open to students who have had Zoology 173, 174, 175, 274, or 275. Prerequisite: introductory biology. One and one-half courses. *Bookhout (Professor Emeritus)*

**191, 192. Independent Study.** For junior and senior majors with consent of the Director of Undergraduate Studies and the supervising instructor. Three courses of 191, 192, 193T, and 194T maximum. Credit to be arranged. *Staff*

**193T, 194T. Tutorial.** For junior and senior majors with consent of the Director of Undergraduate Studies and the supervising instructor. Three courses of 191, 192, 193T, and 194T maximum. Credit to be arranged. *Staff*

### For Seniors and Graduates

**203L. Marine Ecology.** Application of ecological theory to marine systems. Mathematical properties of population growth and species interactions; field and laboratory projects with computer-assisted analysis of data. Practice in scientific writing. Readings from current scientific publications. Prerequisites: introductory biology or invertebrate zoology and calculus. Knowledge of statistics helpful. One and one-half courses. *Sutherland*

**214L. Biological Oceanography.** Impact of biological processes on the physical and chemical character of the environment and the regulating role of abiotic processes on organic productivity. Factors regulating primary and secondary productivity with the estuary and ocean as examples. Emphasis on design and execution of directed research. Prerequisite: consent of instructor, introductory biological or chemical oceanography recommended. One and one-half courses. *Barber*

**250L. Physiological Ecology of Marine Animals.** The physiology of marine animals as related to environmental factors of salinity, temperature, oxygen, and light. Prerequisite: a course in physiology. One and one-half courses. *Forward*

**274L. Marine Invertebrate Zoology.** Structures, functions, and habits of invertebrate animals under natural and experimental conditions. Field trips included. Not open to undergraduate students who have had Zoology 175 except

with consent of Director of Undergraduate Studies. Prerequisite: introductory biology. One and one-half courses. *See (visiting summer faculty)*

**278L. Invertebrate Developmental Biology.** Gametogenesis, fertilization, and development of invertebrates, with emphasis on experimental studies of prelarval stages. Prerequisite: consent of instructor. One course. *McClay and visiting staff*

**281L. Marine Invertebrate Larvae.** Descriptive survey of life cycles, developmental stages, and metamorphosis, with emphasis on larval stages of marine invertebrates; collection, identification, and culture of larval forms in estuarine, inshore and oceanic plankton and sediments. Prerequisites: zoology or consent of instructor. One course. *Lehman*

**295S, 296S. Seminar.** Topics, instructors, and course credits announced each semester. *Staff*

**Genetics, The University Program.** Genetics courses offered by the Department of Zoology are part of the University Program in Genetics described in this bulletin.

**Marine Laboratory.** Consult Marine Sciences in this bulletin for offerings at the Duke University Marine Laboratory and for details of the spring semester program for undergraduates at Beaufort.

## DEPARTMENTAL MAJOR

*Prerequisites.* Biology 11-12 or Biology 14 or consent of Director of Undergraduate Studies.

*Corequisites.* Zoology 74L or consent of the Director of Undergraduate Studies, Mathematics 31, 32, or 34, Chemistry 11, 12, 151, and Physics 51, 52.

### For the A.B. Degree

*Major Requirements.* A minimum of eight courses, not including the above corequisites and prerequisites, but including at least five zoology courses; four of these must be other than independent study, tutorials, or seminars, and at least two must have related laboratory experience (not including Zoology 74L). The zoology courses must represent at least three of these five areas: genetics, cell biology, physiology, ecology, and evolution. The eight courses may include as many as three nonzoology courses taken in appropriate related departments at the 100-level or above (in chemistry, above organic chemistry), which have prior approval of the Director of Undergraduate Studies for zoology. No one course may be used to satisfy the requirements for zoology and another major, or for a zoology major and a second or third division distributional requirement.

### For the B.S. Degree

*Major Requirements.* Same as for the A.B. degree requirements except that a minimum of nine courses, not including the above prerequisites and corequisites, is required. These may include as many as four nonzoology courses taken in appropriate related departments. All other qualifications and restrictions are identical with those for the A.B. degree.

**Areas of Concentration.** Molecular and cellular biology (cell physiology, cytology, genetics, development); organismic biology (comparative physiology, comparative and functional morphology, embryology); population biology (population genetics, speciation, systematics, biogeography); animal behavior; ecology (including biological oceanography and limnology).

**Departmental Handbook for Majors.** Any student who is interested should obtain a copy of the *Handbook for Zoology Majors* from the Office of the Director of Undergraduate Studies. The handbook suggests appropriate combinations of courses for the above listed areas of study, describes the advising system and special programs, and gives the interests and background of the faculty.

**Interdepartmental Concentration.** An interdepartmental program (e.g., in cell and molecular biology, physical biology, marine biology, etc.) may be pursued instead of a departmental major. The Director of Undergraduate Studies in botany or zoology will arrange administrative responsibility for such programs.

## School of Nursing

Professor Wilson, *Dean*; Professor Gratz, *Acting Director of Academic Programs*; Professor Minniear; Associate Professors Bartol, Clausen, Hall, Hogue, Horton, McIntire, Most, Riffle, Sayner, and Schenk; Assistant Professors Anderson, Brundage, Bullock, Cotanch, Daniel, Davenport, Dery, Fox, Gelein, Graedon, Greene, Grosch, Gutmann, Hewitt, Humphrey, Lavacca, Long, Lynds, McCool, Morgan, Seyler, Smith, Strong, Verwoerd, White, and Yoder; Instructors Alexander, Bradham, Dattilo, Gorely, Luke, Matteson, McNaul, Rankin, Roberts, Taylor, and Waddell; Lecturers Harris, Mandetta, Myers, and Reckless; Clinical Faculty Barton, Burkett, Cherpak, Debski, Dugan, Ewers, Hall, Hill, Honea, Kusel, McGrath, Modigh, Oehler, O'Toole, Ritchie, Rosser, and Spencer

**94. Nursing Awareness.** Directed reading and discussion aid students to examine historic purposes of nursing, present status, and directions for the future in the United States, considering the needs of the larger social systems. Open to nonnursing students. One course. *Waddell*

**97, 98. Human Ecology I and II.** An interdisciplinary course in the natural sciences covering the impact of a changing physical and biological environment upon man. Two courses. *Gratz*

**99. Introduction to Statistics in the Health Field.** Statistical concepts involved in the compilation, presentation, and analysis of health data. Measures and methods to describe, correlate, and make inferences about frequency distributions. Open to nonnursing majors. Priority will be given to sophomore nursing students. One course. *Myers*

**101-102. Theoretic and Scientific Bases of Nursing Practice I.** Builds upon courses in human ecology to explore major theories of normal adaptive responses of individuals throughout the life cycle. Concepts relating to the nurse-patient relationship, the self-system, and the individual in the context of the suprasystems of family, community, and society are explored. A systems theory framework is used to consider normal adaptation of the individual as well as major stressors which pose threats to health and human integrity. A systems perspective is also used to assess individual's coping resources and responses to stressors. Prerequisites: Nursing 97 and 98 or equivalent. Two courses. *Staff*

**103-104. Development of Nursing Skills and Attitudes I.** Correlated with Nursing 101-102 by selection of clients of a variety of ages in a variety of settings as exemplars of the individual's normal adaptation and response to stressors. Conferences and seminars enable students to share different experiences and learn how theory and concepts are applicable in different settings, and with individuals of varying ages. Nursing practice encompasses the development of psychomotor skills, cognitive skills, and attitudes essential to the process of nursing. Prerequisites: Nursing 97 and 98 or equivalent. Four courses. *Staff*



**105. Human Genetics and Societal Problems.** A course in the current state of research on birth defects, biochemical disorders, the human chromosome complement, and malformations resulting from mishaps in the chromosomes. Open to nonnursing majors. Pass/fail option. Spring only. One course. *Gratz*

**121S. Parenthood.** An investigation of parenting behavior with a focus on the meaning of experiences to the mother and father and the means by which individuals can maximize the positive potential of these experiences. Open to sophomores or above and nonnursing majors. Pass/fail option. One course. *Harris*

**144. An Introduction to Gerontology.** A study of the process of aging as it relates to the elderly with focus on physiological, sociopsychological changes, and economic status. Emphasis will be on selected areas such as theories of aging, demographic changes, and social policy. Open to sophomore through senior students including nonnursing majors. Pass/fail option. One course. *Riffle*

**146. Cross-Cultural Perspectives on Health Care Delivery.** Health care in several sociocultural environments is explored, with emphasis on health delivery in developing regions. Theoretical bases for assessing and evaluating existing health programs and for predicting outcomes of planned change are examined. Open to sophomores and above. Pass/fail option. (Also listed as Anthropology 146.) One course. *Graedon*

**155-156. Theoretic and Scientific Basis for Nursing Practice II.** A systems approach in these courses is used to explore the nursing of individuals with complex health problems, of families, and the nature and function of groups within organizations and communities. Factors which influence professional nursing and the delivery of health care are discussed. Prerequisites: Nursing 102 and 104. Two courses. *Staff*

**157-158. Development of Nursing Skills and Attitudes II.** These clinical courses taken concurrently with Nursing 155-156 focus on the application of theories, processes, and concepts relevant to the nursing of individuals with complex health care problems and of families with preventive, supportive, and therapeutic nursing needs through use of the nursing process. Inpatient and outpatient clinical experiences provide opportunities for students to intervene with individuals, families, and groups within the context of organizations and communities. Organization and community theories, concepts, and processes will be applied when assessing the structure and function of a health care group in which they are participating. Prerequisites: Nursing 102 and 104. Four courses. *Staff*

**161. Applied Human Physiology.** An in-depth study of selected physiological processes significant to the health needs of man. Emphasis is upon those aspects of physiology that are reflected in patient care problems requiring effective nursing intervention. Prerequisite: Nursing 98 or equivalent. Pass/fail option. Not offered 1979-1980. One course. *Gratz*

**169. Human Sexuality.** A study of the intrapersonal, interpersonal, and sexual aspects of an individual's existence and the forces shaping prevailing and future sexual expressions and human sexuality. Open to nonnursing majors. Pass/fail option. One course. *Mandetta and Reckless*

**172. Psychosomatic Illness and Group Process.** A study of patients with psychosomatic and somatopsychic illness with opportunities to explore causal factors together with approaches for alleviation. Students assume responsibility for direct patient care under supervision and have the opportunity to attend group

therapy sessions. Prerequisite: consent of instructor. Pass/fail option. One course. *Reckless*

**175. Loss and Loneliness.** Intervention with persons experiencing loneliness as a response to loss of specific relational provisions. Emphasis on deficit and creative responses to loss and mobilization of support systems to help individuals cope with loneliness. Pass/fail option. One course. *Staff*

**176. Nonpharmacological Management of Pain and Stress.** A course designed to explore the basic physiology and psychology of pain and stress, to investigate stress-related disorders and to emphasize the development of the student's ability to use and teach nonpharmacological methods for management of pain and stress. One course. *Mandetta*

**178S. Advanced Concepts of Nursing for Patients with Cardiovascular Disease.** Examination and clinical exploration of the role of the nurse in providing health care to individuals with cardiovascular disease. Open to senior nursing students. Pass/fail option. One course. *Staff*

**179. Nursing in Nephrology.** Planned experience providing nursing care for patients with clinical disturbances of renal function utilizing current treatment modalities in a variety of treatment settings. Open to second semester juniors and seniors in the nursing major. Pass/fail option. Spring only. One course. *Brundage*

**191, 192, 193, or 194. Independent Study.** Demonstration of self-direction in planning, implementing, evaluating, and reporting an independent learning experience. The required study for nursing majors must focus on nursing. Minimum of one course. Pass/fail option. *Staff*

**197, 198. Undergraduate Thesis.** Systematic study of a nursing problem. The study culminates in a written thesis. The method of study may involve research or may be limited to the student's critical review of others' work which bears upon the problem selected for study. Prerequisites: completion of the junior year with at least a *B+* average in all nursing courses, including electives in nursing, and consent of course coordinator. Two courses. *Hogue*

**205. Patient Assessment.** An introduction to the methods and techniques of eliciting and recording a health history and performing and recording a complete physical examination. Emphasis on the application of those skills to nursing practice. Open to senior nursing students and graduate nursing students. Pass/fail option. One course. *Roberts*

**222. Issues in Women's Health Care.** Critical examination of issues in women's health care including topics related to women as health providers as well as clients. One course. *Dery*

**225. Work and Health.** Relationships between work and health are explored within a systems framework in which work in its organized form is viewed as stressful yet a significant offering of modern society for preventing even greater stress. Constraints and opportunities in work are considered through exploration of career, task, and organization stresses. Individual, family, and organizational strategies and tactics for dealing with the complex network of factors associated with work are presented. Open to senior and graduate students. Pass/fail option. One course. *Hogue*

**242. Gerontological Nursing.** A study of the biological, sociological, and psychological dimensions of aging. The relationship of these dimensions to nursing intervention will be explored. Emphasis will be on normal aging and selected abnormal conditions common among the aged. One course. *Staff*

**246. Nutrition in the Community Context.** Cultural and biological sources of variability in nutrition. Emphasis is on mutual influence of nutritional status and general health. Socioeconomic, cultural, and environmental aspects of nutrition are examined. One course. *Graedon*

**248. Health and the Family in the United States.** Family health concepts among diverse ethnic groups and social classes in the United States. The role of mainstream and minority group values in family and institutional responses to health problems. Ethical and political issues of intervention. Pass/fail option. One course. *Graedon*

**263. Crisis Intervention and Suicidology.** Exploration of crisis theories with methods of intervention in assisting individuals and families, before, during, and following the crisis. Discussions of specific human and environmental crises with emphasis on suicidal behavior. Application of theories and techniques through clinical practice. Open to graduate and senior nursing students with consent of instructor. Pass/fail option. One course. *Staff*

**269. Clinical Aspects of Human Sexuality.** A course designed to explore the nurse's role in education and counseling for a healthy sexuality. The course focuses on prevention of sexual problems by means of the educative process, anticipatory guidance, and counseling. Sexual dysfunction associated with life events, medical or surgical therapy, trauma, and hospitalization will be considered. In addition, adaptation to the sequellae of sexual relationships such as pregnancy, venereal disease, and abortion will be explored in the clinical setting. Prerequisite: Nursing 169 or consent of instructor. Pass/fail option. One course. *Staff*

**286. Thanatology.** An in-depth exploration of an individual's relationships to death. The course emphasizes feelings about death and examines and integrates clinical and theoretical materials from the social sciences and helping professions. Open to senior and graduate nursing students with consent of instructor. Pass/fail option. One course. *Staff*

**288. Oncological Nursing.** An in-depth study of nursing the patient with cancer, focusing on prevention, detection, diagnosis, treatment, and rehabilitation. Open to seniors and graduate nursing students. Pass/fail option. One course. *McIntire*

## MAJOR IN NURSING

The major requirements are included in the minimum total of thirty-two courses listed under lower and upper division requirements. The specific courses in the upper division satisfying the nursing major that must be included are Nursing 101, 102, 103, 104, 155, 156, 157, 158, and 191, 192, 193, or 194.

## School of Engineering

Professor Vesić, *Dean*; Associate Professor Shepard, *Associate Dean*

### ENGINEERING (INTERDEPARTMENTAL)

**11. Engineering Graphics.** Graphical theory and techniques for engineering design and communication. Visualization and conventional representation of points, lines, surfaces, and objects using freehand sketches. Orthographic (including sectional and auxiliary), perspective, isometric, and oblique views. Introduction to working drawings. Elements of descriptive geometry. Half-course. *Arges*



**51. Computers in Engineering.** Introduction to use of digital computers in engineering. Attributes of digital computer systems; program languages, flow charts; numerical analysis, including approximation and interpolation, searches and maximization, linear equations; applications to engineering; introduction to decision processes in engineering, including linear programming, optimization network methods; punched card operation; graphical output. Not open to students who have completed Computer Science 51. One course. *Medina, Owen, Tsui, and Uliku.*

**72. Introduction to Systems Dynamics.** Unified treatment of mechanical, electrical, fluid, and thermal dynamic systems. Formulation and solution of differential equations; operators, transfer functions, and complex variables. Energy concepts for multiport system analysis. Simulation and analog solution of a variety of engineering problems. Prerequisites: Physics 51 and Mathematics 32. One course. *Garg or Wright*

**75. Mechanics of Solids.** Analysis of force systems and their equilibrium as applied to engineering systems. Stresses and strains in deformable bodies; mechanical behavior of materials; applications of principles to static problems of beams, torsion members, and columns. Selected laboratory work. Prerequisites: Physics 51 and Mathematics 32. One course. *Arges, Palmer, and J. F. Wilson*

**83. Structure and Properties of Solids.** An introduction to materials science and engineering, emphasizing the relationships between the structure of a solid and its properties. The atomic and molecular origins of electrical, mechanical, and chemical behavior are treated in some detail for metals, alloys, polymers, ceramics, glasses, and composite materials. Prerequisites: Chemistry 11 and Mathematics 31. One course. *Cocks, Jones, Pearsall, and Shepard*

**101. Thermodynamics.** A rigorous development of engineering thermodynamics emphasizing the logical structure and manipulation. Classical and statistical concepts of the laws of thermodynamics. Energy and entropy analyses of thermodynamic systems. Property relationships. Chemically reactive systems. Application to power production and energy conversion. Prerequisites: Physics 51 and Mathematics 103. One course. *Elsevier or Harman*

**123. Dynamics.** Principles of dynamics of particles, rigid bodies, and selected nonrigid systems with emphasis on engineering applications. Kinematic and kinetic analysis of machine elements in a plane and in space using graphical and analytical vector techniques. Absolute and relative motion analysis. Work-energy, impact and impulse-momentum. Introduction to vibrations, wave motion, and Lagrange's equations. Prerequisites: Mathematics 103 and Engineering 75, or consent of instructor. One course. *Buzzard, Dvorak, J. F. Wilson, and Wright*

**135. Continuum Mechanics.** The concept of continua. Vectors. Cartesian Tensors. Stress, deformation, and velocity fields. Constitutive equations. Mechanical properties of solids and fluids. Simple problems in elasticity, viscoelasticity, and plasticity. Prerequisites: Physics 51, Mathematics 104 or 111. One course. *Dvorak*

**145. Fluid Mechanics.** Physical properties of fluids; fluid-flow concepts and basic equations; continuity, energy and momentum principles; dimensional analysis and dynamic similitude; viscous effects; applications emphasizing real fluids. Selected laboratory work. Corequisite: Engineering 123. One course. *Muga and J. F. Wilson*

**161, 162. Interdisciplinary Resources for Community Problem Solving.** The objectives of this course are to assist the student in an understanding of the



self, the interaction of the self with others and the environment, and in the analysis of information useful for decision making. Problems in the community are used as a vehicle for developing group and individual approaches to the resolution of specific problems of interest to the students in the course. Prerequisite: consent of instructor. Two courses. *Artley*

**174. Technology Assessment and Social Choice.** Societal, economical, environmental, psychological, and ethical considerations in the design and application of technological systems; techniques for technological forecasting; assessment methodology and recent case studies; impact evaluation; citizen participation and feedback; interdisciplinary team project. (Also listed as Public Policy Studies 174.) One course. *Garg*

**175. Aesthetics, Design, and Culture.** An examination of the role of aesthetics, both as a goal and as a tool, in a culture which is increasingly dependent on technology. Visual thinking, perceptual awareness, experiential learning, conceptual modeling, and design will be explored in terms of changes in sensory environment. Line, space, texture, color, and value will be experienced and analyzed through individual and group problem solving and problem-formulating design projects. Fall semester. One course. *Pearsall*

**183, 184. Projects in Engineering.** Courses in which engineering projects of an interdisciplinary nature are undertaken. The projects must have engineering relevance in the sense of undertaking to meet human need through a disciplined approach under the guidance of a member of the engineering faculty. Prerequisite: consent of the instructor. Two courses. *Engineering Faculty*

## BIOMEDICAL ENGINEERING

Professor Pilkington, *Chairman*; Professor Clark, *Director of Undergraduate Studies*; Professors Dvorak, Hochmuth, McElhaney, Nolte, Thurstone, and Wolbarsht; Associate Professors Barr, Burdick, Evans, Hammond, and Wachtel; Assistant Professor von Ramm

Biomedical engineering includes the application of concepts and methods in the physical, mathematical, and engineering sciences to biology and medicine. This definition covers a broad spectrum ranging from formalized mathematical theory through experimental science to practical clinical applications. The purpose of the undergraduate program in biomedical engineering is to permit students to prepare themselves for graduate work in biomedical engineering, medicine, or biology. This program is flexible and can satisfy the requirements for entrance to graduate work in engineering, physiology, biology, or to medical school.

Opportunities for student research are available in the following biomedical engineering laboratories: The cardio-respiratory systems laboratory includes a PDP-12 digital computer, a PAR signal averager, and an analog computer. Computer science techniques are utilized in acquiring, processing, and modeling biological data. Research in the biomedical materials laboratory is directed toward the development of materials suitable for use in biological environments such as the vascular system. Biomedical engineering in pediatric cardiology measures electrical activity of the heart in animals and humans, to increase the basic knowledge of the heart itself. The optics and acoustics laboratories are employed for research and instruction in the biomedical application of these fundamental areas. Ultrasound instrumentation measures and images biological tissue structures. The electrobiology laboratory explores the communication of information between individual nerve cells in prototypical brains. Optical, mechanical, and electronic equipment is used in recording neural activity, and computational equipment is employed for data analysis and simulation. The biomechanics

laboratory is equipped to measure biomechanical responses of tissues and organs, gait parameters, and to test and develop facilities for prosthetic devices. A cell biomechanics laboratory is equipped for the study of the physical-chemical behavior of the molecular complexes which constitute cells.

**101. Electrobiolgy.** An exploration of the biophysical and chemical bases of bioelectricity as well as the technologies of bioelectric signal evocation, recording, analysis, and simulation. Topics will range from the ionic mechanisms of membrane potentials to the bioelectric control of neuro-muscular systems. Prerequisite or corequisite: Physics 52. One course. *Wachtel*

**110. Introductory Biomechanics.** Static and dynamic analysis of biological systems; analysis of gait and locomotion; balistocardiography; biomechanical aspects of various sport activities, diving, and jumping; power, work, and energy concepts applied to the human body; strength and properties of tissue; and injury mechanisms and tolerance. Prerequisite: Math 31. One course. *McElhaney*

**111. Introduction to Biomedical Physics.** A probabilistic approach to the origin of many physical phenomena important to biology, in particular, transport, via diffusion. Bernoullian and Gaussian distribution and random walk methods lead to an analysis of diffusion. Applications to artificial kidneys and blood oxygenators. One course. *Barr and Clark*

**125. Mechanics of Biological Materials.** An introduction to mechanics of solid, semisolid, and liquid material elements of biological tissues. The relationship of continuum properties to molecular arrangements will be made through statistical thermodynamics. Prerequisite: Engineering 135 or equivalent. One course. *Evans*

**131. Statistical and Computational Methods in Data Analysis I.** Introduction to discrete-time systems and probability. Difference equations, sampling theorem, discrete Fourier Series, z-transforms, and frequency spectra. Probability, random variables, probability density functions, moments, correlation, and transformation of random variables. Prerequisite: Mathematics 135. One course. *Nolte and Pilkington*

**132. Statistical and Computational Methods in Data Analysis II.** Random discrete-time signals, spectral analysis of random signals, detection and estimation of signals in noise. Prerequisite: Mathematics 103 and background in probability. (Also listed as Electrical Engineering 132.) One course. *Nolte and Pilkington*

**163, 164. Biomedical Electronics and Measurements.** A study of the basic principles of biomedical electronics and measurements with emphasis on the operational performance and selection of transducers, instruments, and systems for biomedical data acquisition and processing. Selected laboratory work emphasizes the measurements of specific physiological events. Prerequisite: Electrical Engineering 63 or Engineering 72. Two courses. *Hammond, Thurstone, or von Ramm*

**191, 192. Projects in Biomedical Engineering.** This course is available to seniors who express a desire for such work and who have shown aptitude for research in one area of biomedical engineering. Half-course to two courses. *Staff*

**201. Analysis of Bioelectric Phenomena.** Fundamentals of bioelectric modeling with particular emphasis on neural and cardiovascular systems exhibiting phenomena varying from cellular to the whole organism level. One course. *Wachtel*

**202. Biomedical Transfer Processes.** An introduction to biomedical thermodynamics and transfer processes with particular emphasis on environmental

studies, hyperbaric exposure, and the functions of natural and artificial organs. One course. *Clark*

**203. Bioelectric Potentials and Field Theory.** A study of bioelectric potentials and models for their generation. Analysis from a field theoretic point of view with particular emphasis on formulations that are amenable to computation. One course. *Pilkington*

**204. Real Time Measurement and Control of Heart Events.** Specification of procedures and devices from biological considerations, and their design and construction. Consideration of amplifiers, analog-digital conversion, computer interfaces, and associated programming. Evaluation of selected examples for accuracy, complexity, and cost. One course. *Barr*

**207. Experimental Mechanics.** Experimental studies and techniques basic to mechanics, stress-strain measurements and transducers, dynamic force, acceleration and flow measurements and analysis, viscoelastic behavior and modeling, high speed photographic methods, general applications to biomechanics including gait and analysis, head injury, automotive safety criteria, and blood flow. One course. *McElhaney*

**221. Electrophysiological Techniques.** Instruction in and practice with contemporary methods in electrophysiology with emphasis on intracellular recording and stimulating techniques. Topics include: fabrication and use of microelectrodes, electronic instrumentation, voltage clamping, microiontophoretic techniques, as well as bioelectric data processing and modeling. Format will include lectures and demonstrations, but the main effort will be devoted to practicum work in the laboratory. Offered during summer term I (five weeks). Prerequisites: Biomedical Engineering 101 or Physiology 225, or consent of instructor. One course (Also listed as Physiology 221). *Wachtel*

**223. Biomedical Materials and Artificial Organs.** The use of artificial organs to replace or augment natural function in pumping and oxygenation of blood, removal of nitrogenous wastes and other toxins, and prostheses which have mechanical, chemical, or cosmetic function. Emphasis is placed on molecular architecture of materials for use in biological environment and optimization of parameters of materials which determine their utility in varying applications. One course. *Clark*

**226. Introduction to Continuum Physics.** Thermodynamics and nonlinear mechanics of continuous media. Particular aspects include: thermodynamic potentials and formalism; Lagrangian and Eulerian tensorial representations of finite deformation and rate of deformation of continuous space; equations of equilibrium and intensive stress representations. Developments of elastic and inelastic constitutive relations are based on reversible and irreversible thermodynamic principles. These relations characterize solid, plastic, and liquid material behavior, with intrinsic material properties appropriate to independent deformation and rate of deformation variables. Special emphasis is placed on physical-chemical interaction within the media and at surface boundaries, e.g. internal phase equilibria under stress, long-range electrostatic and dispersive forces at surfaces. Prerequisites: physics 51 and 52 or equivalent; differential calculus. One course. *Evans*

**230. Biomechanics.** Kinematic models of human motions, mechanical properties of bone and soft tissues, hydrodynamics of micturition, load directed growth mechanisms, human tolerance to impact and vibration, head injury criteria applied to helmet design. Prerequisite: consent of instructor. One course. *McElhaney*

**243. Computers in Biomedical Engineering.** An in-depth study of the use of computers in biomedical applications. Hardware, software, and applications



programming will be considered. Data collection, analysis, and presentation will be studied within application areas such as monitoring, medical records, computer-aided diagnoses, computer-aided instruction, M.D.-assistance programs, laboratory processing, wave form analysis, hospital information systems, and medical information systems. One course. *Hammond*

**265. Advanced Topics in Biomedical Engineering.** Advanced subjects related to programs within biomedical engineering tailored to fit the requirements of a small group. Prerequisites: consent of Chairman and instructor under whom the work will be done. One course. *Staff*

### **Departmental Major in Biomedical Engineering**

The major requirements are included in the minimum total of thirty-two courses listed under general requirements and departmental requirements. The following specific courses must be included: Biomedical Engineering 101, 111, 125, 131, 132, 163, and 164.

### **CIVIL ENGINEERING**

Professor Melosh, *Chairman*; Professor Brown, *Director of Undergraduate Studies*; Professors Dvorak, Muga, Utku, Vesić, and Wilson; Associate Professors Palmer and Vesilind; Assistant Professors Arges, Medina, and Tsui; Adjunct Professor Saibel; Lecturers Francisco, Hauser, Lathrop, and Rimer

Civil engineering involves the conception, design, analysis, and building of constructed facilities. However, modern civil engineers may find themselves engaged in such complex problems as trafficability of planetary surfaces, environmental planning for a community, designing space frames, or optimization of an urban transportation system. There are seven major speciality areas of civil engineering at Duke. Environmental engineering deals with the quality of human environment as affected by water supply and waste-water treatment and disposal. Geotechnical engineering is concerned with interaction between engineering structures and the earth's crust as well as with structures constructed of earth as a material. Mechanics and materials engineering is the study of the behavior of materials under various conditions of loading and environment. Ocean engineering deals with the development and use of marine resources. Structural engineering is concerned with economical and safe design of engineering structures. Urban engineering encompasses a broad spectrum of integrated technological problems such as land and city planning and development, mass transportation, and public health and safety. Water resources engineering is concerned with the usage, preservation, and replenishment of water resources. In addition, a student may elect a general program of civil engineering studies or an interdisciplinary program of management sciences combined with civil engineering. The student may also pursue a degree with a double major in civil engineering and the policy sciences, by additionally satisfying the requirements of the Institute of Policy Sciences.

The civil engineering program at Duke is supported by several laboratories for instruction and research. The structural engineering laboratory has universal testing machines with capacities to 400,000 pounds; hardness testers; and machines for testing torsion, fatigue, and impact. The department has facilities for the construction and testing of structural models, including medium-speed electronic equipment for the measurement and recording of strains and displacements. The soil mechanics laboratory includes modern testing equipment and instruments, such as static and dynamic and model testing accessories, as well as a triaxial shear apparatus, designed for testing soil and rock at confining pressures up to 100,000 pounds per square inch. The fluid mechanics laboratory equipment includes a water wave flume with paddle-type variable frequency, constant amplitude, wave



generator, and a variety of sensors. The sanitary engineering laboratory is equipped for determining the characterization of waters and wastewaters and for applying biological, chemical, and physical treatment methods to improve their quality. The materials laboratory deals with the physical properties and stress-deformation characteristics of bituminous mixtures and concretes. The urban systems laboratory is equipped with a PDP-8 digital computer and a teletype terminal. The department has a representative collection of modern surveying equipment.

**16. Surveying for Engineers.** The theory and application of measurements required for planning, design, and construction of engineered facilities. Transit-tape, Electronic Distant Measurement, and stadia surveys; differential and profile leveling; traverse computations; topographic mapping. Laboratory included. Prerequisite: Mathematics 19 or equivalent. Half-course. *Arges*

**116. Transportation Engineering.** The role and history of transportation. Introduction to the planning and design of links, vehicles, and terminals of all transportation modes. Principles of traffic engineering and route location and design. Planning studies and economic evaluation. Prerequisite: junior or senior standing; consent of instructor for nonengineering students. One course. *Hauser*

**117. Public Systems Planning.** The systems approach to public policy planning. Mathematical modeling and computer simulation techniques. Estimation, forecasting, and decision making. System evaluation models. Decision processes in the land use, transportation, public utilities, and urban service sectors. Prerequisite: Mathematics 32. One course. *Staff*

**123. Water Resources Engineering.** Hydraulics of pressure conduits and measurement of flow, compound pipe systems, analysis of flow in pressure distribution systems, descriptive and quantitative hydrology applied to problems of irrigation and drainage, open channel flow, reservoirs and distribution system storage. Selected laboratory work. Prerequisite: Engineering 145. One course. *Medina and Muga*

**124. Environmental Engineering.** Qualitative and quantitative physical, chemical, and bacteriological characterization of water and wastewater. Introduction to water treatment processes and wastewater collection, treatment and disposal systems; elements of environmental sanitation. Laboratory included. Field trips to be arranged. Corequisite: Engineering 145 or consent of the instructor for non-civil engineering students. One course. *Vesilind*

**126. Environmental Resources and Management.** Standards and criteria for evaluation of environmental resources and the management of these resources. Emphasis is placed on water, its distribution, estimated use, role of federal agencies and water quality legislation, parameters of pollution, sources and control. Solid waste and resource recovery, its impact on society and management strategies. Air resources and land planning and management. Evaluation procedures include preparation of responses to case studies as part of an overall environmental assessment. Prerequisite: consent of instructor. One course. *Rimer*

**127. Environmental Pollution Control.** A study of the environment—causes and effects of air, land, and water pollution. Interactions between the environment and stresses to which it is subjected as a consequence of growth and concentration of populations and their increasing demands on natural resources. Solid waste, recycling, noise pollution, and environmental ethics. For non-civil engineering students. One course. *Vesilind*

**131. Theory of Structures.** A first course in the application of mechanics to the analysis of plane and space structures; a unified treatment of statically

determinate and indeterminate structural systems. Prerequisites: Mathematics 103 and Engineering 75. One course. *Brown*

**133. Structural Design I.** Nonhomogenous materials. Determination of physical and mechanical properties of construction materials. Theory and design of compression and flexural members. Emphasis on ultimate strength theory for concrete. Timber design using mechanical fasteners. Laboratory exercises include concrete aggregate evaluation, concrete mix design, and structural timber tests. Prerequisite: Civil Engineering 131. One course. *Brown*

**134. Structural Design II.** Design in metals, primarily steel. Properties of materials as criteria for failure. Tension, compression, and flexural members. Bolted and welded connections, including eccentric connections. Built-up members. Design by elastic and plastic methods. Selected problems to include computations and drawings. Prerequisite: Civil Engineering 131. One course. *Palmer*

**139. Introduction to Soil Mechanics.** Origin and composition of soils, soil structure. Flow of water through soils; capillary and osmotic phenomena. Soil behavior under stress; compressibility, shear strength. Elements of mechanics of soil masses with application to problems of bearing capacity of foundations, earth pressure on retaining walls, and stability of slopes. Laboratory included. Prerequisites: Engineering 83 and 145. One course. *Tsui and Vesic*

**141, 142. Special Topics in Civil Engineering.** Study arranged on a special topic in which the instructor has particular interest and competence as a result of research and professional activities. Prerequisites: consent of the instructor and the Director of Undergraduate Studies. Each half-course or one course. *Staff*

**146. Professional Engineering.** A study of general topics related to the professional practice of engineering with emphasis on economic and legal aspects. Monetary basis for engineering decisions, economic alternatives; contracts, specifications, ethics; quantity and cost estimates; scheduling by the Critical Path Method. Presentation of student papers on current or unique engineering topics. Prerequisite: junior or senior standing in engineering. One course. *Palmer*

**197, 198. Projects in Civil Engineering.** These courses may be taken by junior and senior engineering students who have demonstrated aptitude for independent work. Prerequisites: consent of the instructor and the Director of Undergraduate Studies. Each half-course or one course. *Staff*

**201. Advanced Mechanics of Solids.** Cartesian tensors, dyadics, and matrices. Analysis of states of stress and strain. Conservation laws and field equations. Constitutive equations for elastic, viscoelastic, and elastic-plastic solids. Formulation and solution of simple problems in elasticity, viscoelasticity, and plasticity. One course. *Dvorak*

**204. Plates and Shells.** Differential equation and extremum formulations of linear equilibrium problems of Kirchhoffian and non-Kirchhoffian plates of isotropic and orthotropic material. Solution methods. Differential equation formulation of thin shell problems in curvilinear coordinates; membrane and bending theories; specialization for shallow shells, shells of revolution, and plates. Extremum formulation of shell problems. Solution methods. Prerequisites: Mathematics 111, and Engineering 75 or Engineering 135, or consent of instructor. One course. *Utku*

**205. Elasticity.** Introduction to linear theory of elasticity. Constitutive equations for anisotropic and isotropic elastic solids. Formulation and solution of torsion, bending, and plane problems by semi-inverse, complex potential, and

variational methods. Three-dimensional problems. Prerequisite: Civil Engineering 201 or equivalent. One course. *Dvorak*

**206. Advanced Mechanics of Solids II.** Continuum theories for time-independent and time-dependent materials. Formulation and solution of boundary value problems; analytical and numerical techniques, applications. Prerequisite: Engineering 135 or Civil Engineering 201. One course. *Dvorak*

**209. Structural Dynamics.** Vibration and stability (small and global) of discrete and continuous linear systems; introduction to nonlinear theory, parametric and random excitation. Applications include response studies of machines, ships, pipelines, bridges and buildings to man-made and nature-induced loadings. (Also listed as Mechanical Engineering 209.) One course. *J. F. Wilson*

**210. Intermediate Dynamics.** (Also listed as Mechanical Engineering 210.) One course. *J. F. Wilson*

**212. Mechanical Behavior of Materials.** Mechanical behavior and its relationship to microstructural deformation and fracture processes in polycrystalline, polymeric, and composite materials. Influence of temperature, strain rate, and environmental conditions on material behavior. Fracture mechanics and its application to brittle and ductile fracture, and fatigue in structural metals, polymers, composites, and concrete. Prerequisite: Civil Engineering 201. One course. *Dvorak*

**215. Urban and Regional Geography.** Human settlements and locational patterns. Location theory and land-use systems. Normative and descriptive location decisions. Location and impact of constructed facilities. Spatial interaction and network structure. Geography of transportation and environmental quality. One course. *Staff*

**216. Transportation Planning and Policy Analysis.** Issues in policy planning and decision making in urban and rural transportation systems. Transportation legislation. Public transportation alternatives with emphasis on public transit and paratransit solutions. Prerequisite or corequisite: Civil Engineering 116 or consent of instructor. (Also listed as Public Policy Sciences 254.) One course. *Lathrop*

**217. Transportation Systems Analysis.** The transportation systems planning process. Quantitative analysis, mathematical modeling and computer simulation techniques for short- and long-range planning and evaluation of transportation systems. Prerequisite or corequisite: Civil Engineering 116 or consent of instructor. One course. *Staff*

**221. Incompressible Fluid Flow.** Steady and unsteady pipe flow; theories of turbulent flow; water hammer theory and control; surge tanks; air chambers; the analysis and control of fluid systems; effect of resistance; tapered conductors. One course. *Muga*

**222. Open Channel Flow.** Basic principles. Selected flow problems and practical solutions; gutter and inlet flows, flow over spillways, flow into estuaries and bays. Design of open channel structures, river hydraulics. Design of flood control and navigation structures; culverts, bridge openings, and energy dissipators. One course. *Muga*

**223. Flow Through Porous Media.** Theory of miscible and immiscible fluid displacement processes. Derivation and solution methods. Selected problems in stability, fingering, and capillarity. Applications; saline water intrusion, secondary recovery processes, seepage through earthen dams, dewatering of construction sites, and well point operation. One course. *Muga*



**224. Coastal and Offshore Engineering.** Basic analytical concepts; wave phenomena, theory of surface water wave motion, wave modification, and wave spectra. Effects of waves on structures emphasizing design of marine facilities and other selected problems. One course. *Muga*

**225. Engineering Hydrology.** Dynamics of the occurrence, circulation, and distribution of water; hydrometeorology, geophysical fluid motions. Precipitation, surface runoff and stream flow, infiltration, water losses. Hydrograph analysis, catchment characteristics, hydrologic instrumentation, and computer simulation models. Prerequisite: Engineering 145, or consent of instructor. One course. *Medina or Muga*

**231. Structural Engineering Analysis.** The analysis of fundamental structural forms including arches, suspension cables, and members of variable inertia. Influence lines for indeterminate structures. Introduction to matrix analysis. Prerequisites: Civil Engineering 131 and Mathematics 111, or consent of instructor. One course. *Brown*

**232. Reinforced Concrete Design.** Design of concrete members considering flexural deflection, cracking, and torsional shear. Design of retaining walls, deep beams and shear walls, flat slabs, and flat plates. Code limitations evaluated. Prerequisite: Civil Engineering 133. One course. *Brown*

**233. Prestressed Concrete Design.** A critical review of research and recent developments in prestressed concrete design. Prestressed tanks, beams, and columns; partial prestressing and composite design. Prerequisite: Civil Engineering 133. One course. *Brown*

**234. Structural Design in Metals.** Design of metal structures using both elastic and plastic theories. Application to plate girders, bridge trusses, and building frames. Interpretation and justification of building codes and specifications. Planning, preliminary design, and organization of design procedures. Prerequisite: Civil Engineering 134. One course. *Palmer*

**235. Foundation Engineering.** An introduction to methods of analysis, design, and construction of foundations. Bearing capacity and settlement of shallow and deep foundations. Soil exploration; excavation and bracing; drainage and stabilization; and underpinning. Foundation vibrations. One course. *Vesic*

**236. Earth Structures.** An introduction to methods of analysis, design, and construction of earth structures such as dams, embankments, cuts, canals, and airfield and highway pavements. Selection of materials, soil compaction, and stabilization. Theory of seepage, design of wells, and drainage collectors. Slope stability and related problems. Theory of layered systems and pavement design procedures. One course. *Tsui*

**238. Rock Mechanics.** Behavior and properties of rock as an engineering material; failure of rock. Design and construction of underground structures and slopes in rock; design of rock abutments for dams. Laboratory and field rock testing techniques. Prerequisite: Civil Engineering 139 or consent of instructor. One course. *Tsui*

**241. Environmental Engineering Chemistry and Biology.** Inorganic and organic chemistry including equilibrium concepts as applied to water and wastewater treatment. Basic biology and ecology of natural, polluted, and wastewater treatment systems. Concepts of metabolism, enzyme kinetics, and growth kinetics are stressed. Occasional laboratories to illustrate analytical methods and types of organisms in the environment. Prerequisite: Civil Engineering 124. One course. *Francisco*



**243. Sanitary Engineering Unit Operations and Process Design.** Fundamental bases for design of water and waste treatment systems, including transport, mixing, sedimentation and filtration, gas transfer, coagulation, and biotreatment processes. Prerequisite: Civil Engineering 124 or consent of instructor. One course. *Vesilind*

**245. Pollutant Transport Systems.** Distribution of pollutants in natural waters and the atmosphere, diffusive and advective transport phenomena within the natural environment and through man-made artificial conduits and storage/treatment systems. Analytical and numerical prediction methods. Prerequisites: Engineering 145, and Mathematics 111 or equivalent. One course. *Medina*

**246. Sanitary Engineering Design.** The study of water resources and municipal water requirements including reservoirs, transmission, treatment and distribution systems; methods of collection, treatment and disposal of municipal and industrial wastewaters. The course includes the preparation of a comprehensive engineering report encompassing all aspects of municipal water and wastewater systems. Field trips to be arranged. Prerequisite: Civil Engineering 124 or consent of instructor. One course. *Rimer*

**247. Air Pollution Control.** The problem of air pollution, with reference to chemical and biological effects. Measurement and meteorology of air pollution. Air pollution control methods. Noise pollution, odor, and air pollution law. One course. *Vesilind*

**248. Solid Waste and Resource Recovery Engineering.** Engineering design of resource recovery systems including traditional and advanced technologies. Sanitary landfills and incineration of solid wastes. Energy recovery and recycling processes. Application of systems analysis to collection of municipal refuse. Collection, treatment, and disposal of solid wastes from wastewater treatment. Prerequisite: Civil Engineering 124 or consent of instructor. One course. *Rimer and Vesilind*

**249. Resource Recovery Systems Management.** The social, economic, legal, political, and administrative aspects of resource recovery from municipal solid wastes. Economic applications and systems management. Assessment methodologies. Federal and state legislation. Public versus private sector interests. Policy issues. Case studies. Prerequisite: consent of instructor. One course. *Rimer*

**250. Engineering Analysis.** Formulation of mathematical models selected from a wide variety of engineering disciplines; optimization; use of infinite series, finite difference calculus, energy methods, and digital computers as problem-solving techniques. One course. *J. F. Wilson*

**251. Systematic Structural Analysis.** Theory of systematic analysis for equilibrium and continuity problems, recapitulation of energy theorems, transformation matrices, stiffness and flexibility relations of structural elements and finite elements, force and displacement method models and analysis. Prerequisites: Civil Engineering 131 or Engineering 135, or consent of instructor. One course. *Utku*

**254. Applications of Finite Element Analysis.** Theory of element and material models, models of metals, of rock, reinforced concrete, wood, glass, soil, water and air; analyses of torsion members, shear walls, membranes, plates, shells, solids, and compound structural systems; analysis of soil-structure and fluid-structure systems; prediction of field heating, seepage, and pollution. Prerequisite: Civil Engineering 251 or consent of instructor. One course. *Melosh*

**265. Advanced Topics in Civil Engineering.** Opportunity for study of advanced subjects relating to programs within the civil engineering department tailored to fit the requirements of a small group. One course. *Staff*

### **Departmental Major in Civil Engineering**

The major requirements are included in the minimum total of thirty-two courses listed under the general requirements and departmental requirements. Specific courses which must be included are: Engineering 11 (half-course), 51, 75, 83, 123, 145; Civil Engineering 16 (half-course), 116, 123, 124, 131, 133, 134, and 139.

## **ELECTRICAL ENGINEERING**

Associate Professor Hacker, *Chairman*; Associate Professor Joines, *Director of Undergraduate Studies*; Professors Artley, Kerr, Marinos, Nolte, Owen, Pilkington, Wang, and Wilson; Assistant Professor George; Adjunct Associate Professor Lontz

Electrical Engineering is a broadly based discipline dealing with the processing, control, and transmission of information and energy by making use of the electrical and magnetic forces of nature.

The flexibility of the electrical engineering curriculum permits a student to concentrate in such areas as computers and information processing, communications and control systems, electromagnetic fields and waves, electronic networks, and solid state sciences. A student may also plan a double-major program with secondary concentration in such fields as computer science, mathematics, history, public policy studies, biomedical engineering, and many others. Students with interests such as premedicine, prelaw, management, economics, art, music, psychology, and social systems can be accommodated within the curriculum through programs individually designed to provide specific skills and methods, but in a way which encourages students to think creatively in terms of fundamental concepts.

Opportunities for research and project work are available in the following research and teaching laboratories: the solid state sciences laboratories are concerned with both the microscopic and macroscopic properties of materials with emphasis on electric and magnetic phenomena such as magnetic susceptibility, paramagnetic resonance, electrical conductivity, and magnetic ordering transitions. In the field and matter interaction laboratory studies are being conducted to determine the nature of stimulated and spontaneous electromagnetic radiation from organic and inorganic materials. The electronics laboratory is used for the study of the physical behavior of basic electronic components and of advanced electronic devices and circuits. The spacecraft systems laboratory combines many phases of electrical engineering in solving problems encountered in the electrical systems on modern spacecraft. The controlled personal environment laboratory provides experiential learning activities in a carefully controlled physical environment. In the electromagnetic waves laboratory studies are made on microwave networks and the interaction of electromagnetic waves with biological systems. The minicomputer laboratories provide the opportunity for experience in the operation of two small computers in an instructional and research environment. The digital systems laboratories are utilized for research and instruction in digital systems design and simulation. The adaptive information processing laboratory is concerned with the formulation and performance evaluation of adaptive algorithms for extracting signals and information from noise.

**11, 12. Undergraduate Research in Electrical Engineering.** An elective program in which undergraduate students participate in an ongoing program of research with electrical engineering faculty members. The research topic pursued

by the student is arranged by mutual agreement between the student and the participating faculty member. For freshmen only. Fall and spring semesters. Quarter-course. *Staff*

**42. Introduction to Digital Systems.** A course designed for students who have no previous exposure to switching (Boolean) algebra. Its main objective is to introduce basic notions of switching algebra and to demonstrate the application of these concepts to digital systems design. The operational characteristics of major digital subsystems such as memories, central processing elements, arithmetic units, and input/output devices are discussed in detail, and a general-purpose digital computer system with a simple architecture is functionally analyzed. Selected laboratory work is required. Fall and spring semesters. (Also listed as Computer Science 42.) One course. *Marinos or Owen*

**43. Electronic Instruments and Devices.** The theory of operation and applications of electronic instruments and devices most commonly used by scientists and engineers are presented. Topics include: d.c. and a.c. circuits, transducers, measurements, diode and transistor applications, operational amplifiers, and radiation detectors and generators. Three class sessions and one computation or laboratory session. Prerequisite: Mathematics 31. Spring semester. One course. *Joines*

**51, 52. Undergraduate Research in Electrical Engineering.** For sophomores only. See Electrical Engineering 11, 12. Fall and spring semesters. Quarter course. *Staff*

**63. Electric Networks.** The physical basis for electrical network models. Conductors and semiconductors; energy storage elements. Network topology and equations. Transient response due to initial conditions and step function inputs. Exponential forcing functions and the sinusoidal steady state. System functions; network theorems; power and energy in steady state circuit analysis. Prerequisites: Mathematics 32 and Physics 51 or consent of the instructor. Fall and spring semesters. One course. *Kerr and Wang*

**101, 102. Undergraduate Research in Electrical Engineering.** For juniors only. See Electrical Engineering 11, 12. Fall and spring semesters. Quarter course or half-course. *Staff*

**103. Introduction to Nonlinear Network Theory.** Introduction to theory and techniques for analysis and synthesis of nonlinear circuits. Characterization of 2-, 3-, and n-terminal nonlinear network elements. Laws for interconnecting elements and determining equilibrium equations. Operating points, driving-point and transfer-characteristic plots. Graphical and numerical analysis and synthesis of d.c. and a.c. nonlinear resistive functional networks. Nonautonomous first-order nonlinear networks, and autonomous second-order nonlinear networks. Method of isoclines. Some laboratory and computer simulations. Prerequisite: Electrical Engineering 63. Fall semester. One course. *Owen or Wilson*

**113. Introductory System Theory.** Fourier series. Fourier and Laplace transforms; transfer function analysis. Impulse functions; impulse response of systems; convolution and time domain analysis. Discrete time models and computer simulation of continuous systems. Multiple input-output systems; introduction to state variable analysis. Prerequisites: Electrical Engineering 63. Fall and spring semesters. One course. *Kerr and Wang*

**132. Statistical and Computational Methods in Data Analysis II.** (Also listed as Biomedical Engineering 132). One course. *Nolte or Pilkington*



**143. Introduction to Electromagnetic Fields.** Review of vector analysis. Introduction to Maxwell's equations. Electrostatic and magnetostatic fields and their sources. Electromagnetic power, energy, and the Poynting theorem. Prerequisites: Mathematics 104 or 111 and Physics 52. Fall semesters. One course. *Hacker or Joines*

**151, 152. Undergraduate Research in Electrical Engineering.** For seniors only. See Electrical Engineering 11, 12. Fall and spring semesters. Quarter or half-course. *Staff*

**155, 156. Special Topics in Electrical Engineering.** Study of selected topics in electrical engineering tailored to fit the requirements of a small group. Prerequisites: consent of the Director of Undergraduate Studies and the instructor. Each half-course or one course. *Staff*

**157. Introduction to Switching and Automata Theory.** This course introduces techniques for the analysis and design of combinational and sequential networks. Discrete mathematical systems; elements of code theory; threshold logic; functional decomposition; minimum-complexity combinational and sequential networks; asynchronous and clocked sequential systems; iterative switching structures; Turing machines; fault diagnosis techniques. Selected laboratory work. Usually open to juniors and seniors. Fall semester. (Also listed as Computer Science 157.) One course. *Marinos*

**161. Electronic Circuits.** Graphical and mathematical modeling of electronic devices such as diodes, bipolar-junction and field-effect transistors, and vacuum tubes; techniques for the analysis and design of electronic circuits with emphasis on graphical, piece-wise linear, and small-signal methods; applications of these methods to particular circuits, including regulators, bias-point stability, amplifiers, and switching circuits; computer simulation of electronic circuits using ECAP. Three class sessions and one computation or laboratory session. Prerequisite: Electrical Engineering 63. Spring semester. One course. *George or Wilson*

**162. Electromechanical Energy Conversion.** Principles of energy storage and conversion utilizing magnetic and electric fields; analytical treatment of dynamic equations of motion, including the Euler-Lagrange approach; applications to the design of electromechanical transducers and rotating machines. Three class sessions and one laboratory. Prerequisite: Electrical Engineering 113. One course. *Trickey*

**164. Electromagnetic Fields and Waves.** Discussion of plane waves in insulating and conducting media. Reflection and refraction of plane waves. Transmission lines and waveguides for practical applications. Introduction to radiation and antennas. Prerequisite: Electrical Engineering 143. One course. *Joines or Hacker*

**173, 174. Projects in Electrical Engineering.** A course which may be undertaken only by seniors who are enrolled in the graduation with distinction program, or who show special aptitude for individual project work. Prerequisite: consent of the Director of Undergraduate Studies. Elective for electrical engineering majors. Half-course to two courses. *Staff*

**185. Pulse and Digital Electronics.** Generation and shaping of waveforms encountered in information processing systems, such as radar, computer, control, and instrumentation systems. Typical circuit functions included are linear and nonlinear wave shaping, pulse and time-base generation, time delay, counting, and gating. Emphasis on the application of semiconductor devices to the realization of



circuit functions. Three class sessions and one computation or laboratory session. Prerequisite: Electrical Engineering 161. One course. *George*

**186. Modulation Systems and Noise.** Analysis and design of modulation systems. Description of deterministic and probabilistic signals; power spectra; sampling theory; amplitude-, frequency-, and pulse-modulation systems, and pulse-modulation techniques; comparison of various modulation systems. Selected laboratory work. One course. Prerequisite: Electrical Engineering 113. *Nolte or Owen*

**188. Electrical Energy Systems.** An introduction to the generation and transmission of electrical energy from a modern system theory point of view. Modeling of synchronous machines, three-phase power transformers, and high-energy transmission lines. Steady-state load flow analysis; optimum operating strategies and load control. Transients due to symmetrical faults. Introduction to unbalanced system analysis and transients; system stability. The use of state variable models in the analysis of energy systems. Three class sessions. Prerequisite: Electrical Engineering 113. Spring semesters. One course. *Kerr*

**196. Microwaves and Quantum Electronics.** A study of the special field and circuit techniques required at microwave frequencies; electromagnetic wave propagation in unbounded and bounded media; transmission and reflection properties of various microwave networks. Equivalent circuits and matrix methods will facilitate analysis. Discussion of microwave amplifiers and oscillators, including klystrons, magnetrons, traveling-wave tubes, and masers. Selected laboratory experiments. Three class sessions and one computation or laboratory. Prerequisite: Electrical Engineering 164. One course. *Joines*

**199. Linear Control Systems.** Analysis and design of feedback control systems. Block diagram and signal flow graph system models. Servomechanism characteristics; steady state errors; sensitivity to parameter variations and disturbance signals. Time domain performance specifications. Stability. Root locus, Nyquist, and Bode analysis; design of compensation circuits; closed loop frequency response determination. Introduction to time domain analysis and design. Prerequisite: Electrical Engineering 113 or consent of instructor. Spring semester. One course. *Kerr or Wilson*

**202. Modelling and Simulation.** Modelling of deterministic and random signals, with emphasis on band-limited signals and sampling theorems. Numerical methods for describing the input-output behavior of systems. Simulation of linear systems using Z-transform, spline component, and state-transition methods. Simulation of nonlinear systems by Runge-Kutta and predictor-corrector methods. Error comparisons for the linear and nonlinear methods. Computer generation of pseudo-random sequences. Numerous computer exercises. Prerequisites: Electrical Engineering 113 or equivalent and computer programming capability. One course. *Kerr*

**203. Random Signals and Noise.** Introduction to mathematical methods of describing and analyzing random signals and noise. Review of basic probability theory; joint, conditional, and marginal distributions; random processes. Time and ensemble averages, correlation, and power spectra. Optimum linear smoothing and predicting filters. Introduction to optimum signal detection and parameter estimation. Fall semester. One course. *Kerr or Nolte*

**204. Information Theory and Communication Systems.** Information and entropy and their application in communication situations. Noise and channel capacity, coding, and the fundamental theorem of information theory. Continuous channels and transmission of band-limited signals. Comparisons of various practical modulation techniques from the standpoint of information rate and error

probability. Spring semesters, 1978, 1980. Prerequisite: Electrical Engineering 203. One course. *Kerr or Nolte*

**205. Signal Detection and Extraction Theory.** Introduction to signal detection and information extraction theory from a statistical decision theory viewpoint. Subject areas covered within the context of a digital environment are decision theory, detection, and estimation of known and random signals in noise, estimation of parameters and adaptive recursive digital filtering, and decision processes with finite memory. Applications to problems in communication theory. Spring semester. Prerequisite: Electrical Engineering 203 or consent of instructor. One course. *Nolte*

**206. Digital Signal Processing.** Introduction to the fundamentals of processing signals by digital techniques with applications to practical problems. Discrete time signals and systems, elements of the z-transform, discrete Fourier transforms, digital filter design techniques, fast Fourier transforms, and discrete random signals. Spring semester. One course. *Nolte*

**207. Fault-Tolerant Computer Systems.** Test generation and diagnostic program development for detection and location of faults in digital networks; digital simulation as a diagnostic tool for test generation and verification of the initial system design; design of self-checking and fault-tolerant systems; and effectiveness evaluation of various fault-tolerant schemes. Fall semester. (Also listed as Computer Science 207). One course. *Marinos*

**208. Digital Computer Design.** Hardware implementation of combinational and sequential switching networks. Arithmetic elements, switching matrices, character generators, counters, and shift registers. Detailed design and simulation of a general-purpose computer system. Computer architectures based on macromodules, hardware compiler implementations, and parallel processing concepts are also discussed. Prerequisite: Electrical Engineering 157 or consent of instructor. Spring semester. (Also listed as Computer Science 208.) One course. *Marinos*

**211. Solid State Theory.** A treatment of postulatory quantum mechanics and statistical mechanics to serve as a background for the solid state sciences. Topics include both the Schrodinger and matrix formulations, angular momentum, perturbation methods, Maxwell-Boltzmann and Fermi distributions. Prerequisite: consent of instructor. Fall semester. One course. *Hacker*

**212. Solid State Materials.** Concepts of solid state physics as applied to engineering materials; electric, magnetic, thermal, and mechanical properties of solids; dielectrics; semiconductors; magnetic materials; superconductors. Prerequisite: Electrical Engineering 211. Spring semester. One course. *Hacker*

**213. Principles of Magnetism.** A discussion of the various classes of magnetic materials including diamagnets, paramagnets, ferromagnets, antiferromagnets, and ferrimagnets. Typical topics include: crystal field effects, exchange interactions, domain formation, and resonance phenomena. Prerequisite: consent of instructor. One course. *Artley or Hacker*

**215. Semiconductor Physics.** A quantitative treatment of the physical processes that underlie semiconductor device operation. Topics include: band theory and conduction phenomena; equilibrium and nonequilibrium charge carrier distributions; charge generation, injection, and recombination; drift and diffusion processes. Prerequisite: Electrical Engineering 211 or consent of instructor. One course. *Hacker*

**217. Lasers.** Principles of lasers. Discussion of quantum electronics, optical configuration; solid state, gaseous, and liquid devices; modulation; high power operation. Some laboratory work. Prerequisite: consent of instructor. Spring semester, 1979. One course. *George or Lontz.*

**222. Nonlinear Analysis.** Introduction to methods of analyzing engineering systems described by nonlinear differential equations: analytic, numerical, graphical, and series approximation methods; analysis of singular points; stability of nonlinear systems. Applications of various methods, such as the modified Euler, Runge-Kutta, isoclines, perturbation, reversion, variation of parameters, residuals, harmonic balance, Bendixon, and Liapounov to phenomena of nonlinear resonance, subharmonics, relaxation oscillations, and forced oscillating systems. Fall semester. (Also listed as Mechanical Engineering 232.) One course. *Wilson*

**224. Integrated Electronics.** Application of integrated circuits in analog and digital systems. Topics include the effect of fabrication techniques on circuitry design, a study of differential and operational amplifiers, feedback, frequency response and compensation techniques, and the consideration of various logic families. Some laboratory and computer simulation work. Prerequisite: Electrical Engineering 161 or equivalent. Fall semester. One course. *Wilson.*

**225. Semiconductor Electronic Circuits.** Analysis and design of electronic circuits utilizing a variety of static and dynamic models of semiconductor devices. Transistor and other semiconductor device circuit models; bias stability; high frequency and noise models; switching characteristics; illustrative semiconductor circuits. Selected laboratory work. Spring semester. Prerequisite: consent of instructor. One course. *Joines*

**226. Modeling and Computer-aided Analysis of Electronic Systems.** Modeling of linear and nonlinear components and devices. Network topology, including nodal and state variable formulations. Sparse matrix techniques for nodal formulations; explicit and implicit integration techniques for state variable formulations. Algorithms for computer-aided analysis. Selected projects. Prerequisite: Electrical Engineering 103 or 161, or equivalent. Spring semester. One course. *Owen*

**227. Network Synthesis.** Linear network theory, including a review of time and frequency domain analysis; network graphs; network functions and realizability condition; driving point impedance synthesis of passive networks; driving point and transfer specifications; approximation methods. Prerequisite: consent of instructor. One course. *George*

**231. Energy Systems.** A comprehensive treatment of the general concepts of storage, transfer, transformation, and control that are applicable to a variety of technical systems with emphasis on their common mathematical structure. Attention is given to the human use of energy for personal, industrial, and commercial purposes. Economic and social factors as well as scientific factors are considered. Fall semester. One course. *Artley*

**234. Power Electronics: High-Power Circuits.** Basic principles of analysis and design of electronic power control and conversion circuits with particular emphasis on thyristor (SCR's, TRIAC's, etc.) circuits. Characteristics of high-power semiconductors, commutating circuits, ac voltage controllers, ac-to-ac controlled rectifiers, dc-to-dc converters, dc-to-ac inverters, ac-to-ac converters. Prerequisite: Electrical Engineering 161 or equivalent. Spring semester. One course. *Wilson and Owen*

**235. Nonlinear Magnetic and Semiconductor Power Converters: Design and Control I.** Engineering properties of modern soft magnetic materials. Mathe-



matical descriptions of nonlinear magnetic and semiconductor characteristics for transient and steady-state analysis of power electronic circuits. Design of saturable and nonsaturating magnetic devices. State-plane analysis of negative-resistance oscillators and self-oscillating dc-to-ac inverters. Considerations of starting problems, semiconductor switching losses, magnetic core losses, and efficiency. Prerequisites: Electrical Engineering 161 or equivalent and consent of instructor. Fall semester. One course. *Wilson and Owen*

**236. Nonlinear Magnetic and Semiconductor Power Converters: Design and Control II.** Analysis, design, and control of electronic dc-to-dc power converters utilizing energy storage principles. Optimum configurations, stability, losses, large-signal and small-signal dynamic response, measurement techniques. Special attention given to design of pulse modulated controllers using state-space and frequency-response techniques. Prerequisite: Electrical Engineering 235. Spring semester. One course. *Owen and Wilson*

**237, 238. Advanced Power Electronics Laboratory and Seminar.** Experiments related to the design, control, measurement, and application of power electronic circuits and systems. Prerequisite: consent of instructor. Fall and spring semesters. One course each semester. *Owen and Wilson*

**241. Linear Systems.** Modeling of multiple input-output linear systems in the frequency and time domains. Matrix differential and difference equations and their solutions; state variables. Digital simulation of differential systems. Fourier analysis of signals and systems. Transform techniques applied to state variable models. State space models of distributed systems. Fall semester. One course. *Kerr or Wang*

**242. Modern Control and Dynamic Systems.** See course description for Mechanical Engineering 230. (Also listed as Mechanical Engineering 230.) One course. *Wright*

**243. Advanced Linear Systems Theory.** Linear spaces and linear operators. Impulse-response matrices. Controllability and observability. Irreducible realizations of rational transfer function matrices. Canonical forms, state estimators, and observer theory. Stability. Linear time-invariant composite systems. Prerequisite: Electrical Engineering 241. Spring semesters, 1980, 1982. One course. *Wang*

**251. Pattern Classification and Recognition.** Parameter estimation and supervised learning; nonparametric techniques; linear discriminant functions; clustering; language theory related to pattern recognition and syntactic pattern recognition; examples such as characters, severe weather recognition, and classification of community health data are discussed. Prerequisite: consent of instructor. Spring semesters, 1980, 1982. One course. *Wang*

**252. Computer Systems Organization.** (Also listed as Computer Science 252). One course. *Trivedi*

**265. Advanced Topics in Electrical Engineering.** Opportunity for study of advanced subjects related to programs within the electrical engineering department tailored to fit the requirements of a small group. Prerequisites: approval of the Director of Undergraduate Studies and of instructor under whom work will be done. One course. *Staff*

**266. Biofeedback Systems.** Instrumentation, on-line computer analysis, and models associated with biofeedback systems. Selected readings will be considered in conjunction with experience in laboratory feedback practices. The physical, physiological, and psychological aspects of biofeedback provide a vehicle for experiential learning which relates individual experience to models used in



systems theory, field theory, electronics, and communications. Prerequisite: consent of instructor. Spring semester. One course. *Artley*

**271. Electromagnetic Theory.** The classical theory of Maxwell's equations; electrostatics, magnetostatics, boundary value problems including numerical solutions, currents and their interactions, and force and energy relations. Three class sessions. Fall semester. Prerequisite: consent of instructor. One course. *Joines or Hacker*

**272. Application of Electromagnetic Theory.** Propagation of electromagnetic waves in various structures and media; mathematical description of microwave networks, including equivalent circuits and matrix methods; microwave circuit theorems and synthesis techniques. Selected laboratory experiments. Spring semesters, 1980, 1982. Prerequisite: Electrical Engineering 271. One course. *Joines*

### **Departmental Major in Electrical Engineering**

The major requirements are included in the minimum total of thirty-two courses listed under the general requirements and departmental requirements. The specific courses Electrical Engineering 63 and 113 must be included.

### **MECHANICAL ENGINEERING AND MATERIALS SCIENCE**

Professor Chaddock, *Chairman*; Professor Garg, *Director of Undergraduate Studies*; Professors Clark, Cocks Harman, and Pearsall; Adjunct Professor Roberts; Associate Professors Elsevier, Shepard, and Wright; Adjunct Associate Professor Mayer; Assistant Professors Buzzard, Hight, Johnson, Jones, and Shaughnessy; Adjunct Assistant Professor Sud

In a modern technological society the profession of mechanical engineering has a three-fold role. The first and traditional role is the production of devices and machines. The products are as varied as the needs of mankind, from a mechanical toothpaste tube filler to a hydraulic turbine for harnessing tidal power or a home heating system powered by solar energy. The second role has gradually evolved from the first, and now encompasses in-depth technical analyses and the design of complex engineering systems. Examples are nuclear power stations and ocean habitats for undersea exploration. The third role involves the relationship between technological change and man's social, biological, and physical environment. It is no longer adequate to consider only obvious benefits and immediate costs; engineering solutions must be related to society's nontechnical needs and problems. If an educational program is to provide engineering leaders, it must respond to these broadening roles.

Historically, the available materials have limited the technological development of any age. The development of materials with particular combinations of mechanical, chemical, and electrical properties continues as a limiting step for technological advances on almost every engineering frontier. An especially crucial area requiring the skills of materials scientists and engineers is that of energy conversion. Needs exist not only in the overall production, distribution, and use of energy itself, but also in the development of less energy-consuming processes for the production of materials.

The undergraduate curriculum in mechanical engineering and materials science provides a broad base in the basic sciences and mathematics, engineering and materials sciences, analog and digital computation, mechanical design, systems theory, and engineering applications involving analysis, synthesis, and design. The search for viable solutions to mankind's problems also requires an engineer to interact with other professions and disciplines; to reach out for an understanding of the economic, social, health, and political consequences of engineering deci-

sions. Elective opportunities in the social sciences, life sciences, and humanities help fill this need.

Undergraduate laboratories provide unique learning experiences and assist in the development of professional attitudes and approaches to typical engineering problems. In the system dynamics laboratory, fundamentals of instrumentation and dynamic responses are introduced through simulation techniques. The materials laboratory has equipment for the synthesis and evaluation of metals, polymers, ceramics, and biomaterials. Experiments in the fluid mechanics and heat transfer laboratories relate velocity and temperature field measurements to fluid friction and heat exchange processes. In the system response and control laboratory, computer simulation of feedback systems and familiarization with automatic control of hydraulic and pneumatic components is emphasized.

Involvement with mechanical engineering and materials science goes beyond any specific technology, device, or system. Based on the curriculum, students will experience the ways in which scientific knowledge can be utilized in the design and development of useful devices and processes. With the curriculum flexibility and the variety of course offerings, students can choose courses of study most suited to their aptitudes.

Students wishing to meet the requirements for graduation with distinction in mechanical engineering and materials science must satisfy the requirements specified in the undergraduate bulletin under academic honors. Additionally, the student must successfully complete a 200-level course in an area related generally with the central focus of the project. The 200-level course may be taken prior to, concurrent with, or subsequent to the work of the special project.

**11, 12. Undergraduate Research in Mechanical Engineering.** An elective program in which undergraduate students participate in an ongoing program of research with mechanical engineering faculty members. The research topic pursued by the student is arranged by mutual agreement between the student and the participating faculty member. For freshmen only. Quarter-course. *Staff*

**65. Introduction to Energy Technology.** The objectives of this course are to survey the whole field of energy conservation and control, and to stimulate the student into thinking creatively and inventively about energy technology. Topics to be covered include: the energy crisis; energy sources and uses; thermodynamics, engineering approaches to energy conversion, nuclear and fossil fuel power plants; new energy technologies including solar, geothermal, wind, and tidal; transportable energy sources and energy storage systems. Not open to junior and senior mechanical engineers. One course. *Chaddock, Cocks, Harman, and Shepard*

**102. Thermodynamics II.** Review of the laws of thermodynamics and some of their consequences relative to energy conversion. Statistical concepts of the second law. Properties of real gases, gas mixtures, and solids. Generalized thermodynamic relationships. Combustion, thermochemistry, and chemical equilibrium. Applications to combustion power cycles, propulsion, and heat pumping. Prerequisite: Engineering 101. One course. *Elsevier*

**111. Physical Metallurgy.** Extension of the principles of Engineering 83 to the metallic state; atomic, experimental, and thermodynamic approaches to metallurgy; phase transformations and hardening mechanisms, relationships between the structure of alloys and plastic behavior with emphasis on engineering alloy systems. Prerequisite: Engineering 83. One course. *Cocks, Pearsall, or Shepard*

**112. Polymer Science.** Extension of the principles of Engineering 83 to high molecular weight polymers, especially those which have significant engineering applications; structure and properties of polymers; polymerization mechanisms;

properties of commercial polymers; polymer processing. Prerequisite: Engineering 83. One course. *Clark or Pearsall*

**113. Materials Science and Energy Technology.** The limitations imposed by materials problems on the development of new energy technologies. Nuclear power and thermonuclear fusion, solar power, magnetohydrodynamics, fuel cells, superconducting electric power generators, and geothermal systems will be studied together with the materials limitations of magnetic, dielectric, mechanical, and gaseous fuel energy storage methods. The role of materials technology in increasing the efficiency of conventional conversion methods will also be included. Prerequisite: Engineering 83 or Mechanical Engineering 65. One course. *Cocks and Shepard*

**115. Failure Analysis and Prevention.** A study and analysis of the causes of failure in engineering materials and the diagnosis of those causes. Elimination of failures through proper material selection, treatment, and use. Case histories. Examination of fracture surfaces. Laboratory investigations of different failure mechanisms. Prerequisite: Engineering 83 or consent of instructor. One course. *Cocks, Jones, or Shepard*

**126. Fluid Mechanics.** An introductory course emphasizing the application of the principles of conservation of mass, momentum, and energy to a fluid system. Physical properties of fluids; dimensional analysis and similitude, viscous effects and integral boundary layer theory; subsonic and supersonic flows; normal shock waves. Selected laboratory work. Corequisites: Mechanical Engineering 123 and 101. One course. *Shaughnessy*

**136. Response of Systems.** System design for optimum dynamic response. Development of mathematical models from physical systems, operational and computer techniques, matrix methods for lumped and distributed systems, instrumentation and testing of components and systems, effect of nonlinearities. Prerequisites: Mathematics 111 and Engineering 72. One course. *Garg or Wright*

**141. Mechanical Design.** A study of the broad aspects of mechanical design starting with the creative process and considering the effects of economics, human factors, ethics, and prior art on design. Basic mechanical components such as gears, cams, bearings, springs, shafts, etc. will be introduced in the discussions so that the student will become familiar with their design and application. A term design project will serve to practice the application of the design process. Prerequisite: Engineering 123. One course. *Hight or Wright*

**150. Heat and Mass Transfer.** A rigorous development of the laws of mass and energy transport as applied to a continuum. Energy transfer by conduction, in laminar and turbulent flow inside and outside of tubes, and by radiation. Application to heat exchangers, thermal power equipment, and heat transfer in the environment. Introduction to the principles of molecular diffusion and convective mass transfer. Use of the analogies between mass, momentum, and energy transfer in problem solving. Selected laboratory work. Prerequisites: Mechanical Engineering 126 and Mathematics 111. One course. *Buzzard or Chaddock*

**153. Heating, Air Conditioning, and Refrigeration.** Principles of thermodynamics, heat transfer, and fluid flow applied to comfort and industrial air conditioning. Cycles and equipment for heating, cooling, and humidity control. Air transmission and distribution. Modern vapor compression, absorption, and low temperature refrigeration cycles and systems. Prerequisite: Engineering 101. One course. *Elsevier*

**156. Combustion Engines.** A study of cycles, fuels, and fuel mixtures in piston, ram jet, and rocket engines. Comparison of real and theoretical cycles;



carburetion and fuel injection systems; and modern developments. Prerequisite: Engineering 101. One course. *Elsevier*

**165, 166. Special Topics in Mechanical Engineering.** Study arranged on a special engineering topic in which the faculty has particular interest and competence as a result of research and professional activities. Prerequisites: consent of the instructor and the Director of Undergraduate Studies. Each half-course or one course. *Staff*

**177. Computer Techniques for Simulation and Design.** Optimization methods for engineering design. Unconstrained and constrained minimization procedures with linear programming shown as a special case of the gradient projection method. Computer solutions and design projects emphasized. One course. *Wright*

**183. Power Generation.** Basic concepts of thermodynamics, heat transfer, and fluid flow are applied to power generation processes. Steam power plants, both fossil fuel fired and nuclear reactor, are emphasized. Gas turbine, internal combustion engine, and combined cycles are included. Design and analysis includes economic and environmental consideration. One course. *Harman*

**198. Projects in Mechanical Engineering.** This course may be assigned by the Chairman of the department to outstanding seniors who express a desire for such work and who have shown aptitude for research in one distinct field of mechanical engineering. Prerequisites: B average and senior standing. Half-course to two courses. *Staff*

**202. Engineering Thermodynamics.** Review of classical thermodynamics. Thermodynamics of continuum properties of real substances. Analysis of energy conversion with internal irreversibility and advanced engineering problems. Introduction to the statistical basis of thermodynamics. One course. *Harman*

**209. Structural Dynamics.** (Also listed as Civil Engineering 209.) One course. *J. F. Wilson*

**210. Intermediate Dynamics.** Comprehensive treatment of space kinematics, kinetics of particles and rigid bodies; generalized coordinates and Lagrange's equations; introduction to stability and random dynamic analysis of flexible, continuous systems. (Also listed as Civil Engineering 210.) One course. *J. F. Wilson*

**211. Theoretical and Applied Polymer Science.** An advanced course in materials science and engineering, dealing specifically with the structure and properties of polymers. Particular attention is paid to recent developments in the processing and use of modern plastics and fibers. Product design is considered in terms of polymer structures, processing techniques, and properties. One course. *Clark or Pearsall*

**213. Advanced Materials Science.** An in-depth study of current problems in materials applications conducted in a seminar format. Treatment will include thermal, electrical, optical, and magnetic properties of materials in terms of basic physical concepts. Subjects intended to provide materials scientists and engineers with a theoretical basis for understanding and manipulating properties. Prerequisites: Engineering 83 and Mechanical Engineering 111 or 112. One course. *Cocks or Shepard*

**214. Corrosion and Corrosion Control.** Effects of environments on the design and utilization of modern engineering alloys. Theory and mechanisms of corrosion, particularly in seawater and atmospheric environments. Microstructural



aspects of diffusion, oxidation, hot corrosion, and stress corrosion. Prerequisite: Engineering 83. One course. *Cocks or Jones*

**216. Materials Design and Resource Conservation.** The role of materials science and engineering in the field of resource conservation and recovery. Selection of materials for components of consumer products and equipment. Designing materials at atomic, molecular, and phase-structure levels to minimize energy consumption, optimize properties, and enhance recycling. Analysis of some constraints posed by thermodynamics, economics, raw material availability, and governmental policies. Prerequisite: Engineering 83. One course. *Pearsall*

**221. Compressible Fluid Flow.** Basic concepts of the flow of gases from the subsonic to the hypersonic regime. Effects of friction, heat transfer, and shock on one-dimensional inviscid flow. Potential theory, oblique shock waves, and special calculation techniques in two-dimensional flow. One course. *Harman or Shaughnessy*

**222. Heat Transfer.** Steady-state and transient solutions of the general heat conduction equation. Development of the equations for transport of energy by fluid motion. Principle of similarity and dimensional analysis in convective energy transport. Solutions of the boundary layer equations. The laws of radiation heat transfer and radiation heat exchange. One course. *Chaddock or Buzzard*

**223. Principles and Design of Heat Transfer Equipment.** Application of theoretical and experimental developments in heat transfer to the design of heat exchangers. Study of fin shapes, finned passages, fouling factors, baffling and other parameters of heat exchanger design. Analytical and numerical methods for design calculation illustrated with equipment, such as furnaces, recuperators, regenerators, solar collectors, condensers, evaporators. Prerequisite: Mechanical Engineering 150. One course. *Chaddock or Johnson*

**224. An Introduction to Turbulence.** Flow instability and the transition to turbulence. Physical characteristics of turbulent flows, averaging, and the Reynolds equation. Turbulent transport and mixing length theories. The statistical description of turbulence, correlations, and spectra. Fourier transforms. Measurement techniques. One course. *Shaughnessy*

**226. Intermediate Fluid Mechanics.** A survey of the principal concepts and equations of fluid mechanics. Fluid properties. Statics. Basic equations for the control volume. The differential equations of fluid motion. Stream function. Irrotational flow. Navier-Stokes equations. Kelvin's and Crocco's theorems. Applications to two-dimensional incompressible potential flow and to viscous flow in boundary layers. One course. *Shaughnessy*

**227. Advanced Fluid Mechanics.** Flow of a uniform incompressible viscous fluid. Exact solutions to the Navier-Stokes equation. Similarity methods. Irrotational flow theory and its applications. Elements of boundary layer theory. Prerequisite: Mechanical Engineering 226, or consent of instructor. One course. *Shaughnessy*

**230. Modern Control and Dynamic Systems.** Dynamic modeling of complex linear and nonlinear physical systems involving the storage and transfer of matter and energy. Unified treatment of active and passive mechanical, electrical, and fluid systems. State space formulation of physical systems. Time and frequency-domain representation. Controllability and observability concepts. System response using analytical and computational techniques. Lyapunov method for system stability. Modification of system characteristics using feedback control and compensation. Introduction to optimal control using Euler-Lagrange and

Pontryagin's formulations. Emphasis on application of techniques to physical systems. (Also listed as Electrical Engineering 242.) One course. *Garg or Wright*

**231. Systems Response and Control.** Methods, applicable to design, of obtaining parameters for strength, response, and stability studies to mechanical systems. Analysis of closed loop control systems with linear transfer functions; electrical and mechanical analogs; introduction to determination of transfer function from input-output characteristics. One course. *Wright*

**232. Nonlinear Analysis.** Fall semesters. Prerequisite: consent of instructor. (Also listed as Electrical Engineering 222.) One course. *T. Wilson*

**235. Advanced Mechanical Vibrations.** Analytical and experimental procedures applied to design of machines and systems for adequate vibration control. Determination of eigenvalues and eigenvectors by iteration and computer techniques; transfer matrices applied to lumped and distributed systems; analytical and numerical methods of obtaining the pulse response of plane and three dimensional multimass systems; convolution and data processing; introduction to random vibration. One course. *Wright*

**236. Engineering Acoustics and Noise Control.** Specification of the physical properties of noise, noise measurement, and absorption, transmission, and propagation of sound. Effects of noise on man, noise exposure, and damage risk criteria. Legal aspects of noise control, source modification, enclosures, barriers, and personnel protectors. Prerequisites: Mechanical Engineering 123 and Mathematics 111. One course. *Wright*

**254. Solar Energy Thermal Processes.** Solar radiation instrumentation, measurements, data, and estimation. Radiation heat transfer characteristics of opaque materials and partially transparent media. Performance and design calculations for flat-plate and focusing collectors. Thermal energy storage. Solar water heating and heating and cooling of buildings. Economics and life-cycle costing studies for solar installations. Survey of research, development and demonstration projects on solar thermal processes. One course. *Chaddock*

**265. Advanced Topics in Mechanical Engineering.** Opportunity for study of advanced subjects related to programs within mechanical engineering tailored to fit the requirements of a small group. Prerequisites: approval of the Director of Undergraduate or Graduate Studies and the instructor under whom work will be done. One course. *Staff*

**273. Ocean Engineering.** Application of classical engineering disciplines to components and systems operating in the marine environment. Topics include marine corrosion, hydrodynamics and stability of vessels, marine power systems, man-rated pressure vessel and submersible design. Engineering concepts applied to the physiology and mechanics of diving, and marine-related energy resources. Prerequisite: Engineering 101 or equivalent. *Johnson*

**280. Nuclear Reactor Power Cycles.** Basic reactor principles and types. Examination of most feasible thermodynamic cycles for use with both stationary and mobile power plants. Consideration of safety shielding, heat transfer, fluid flow, and materials problems unique to reactor design. One course.

### **Departmental Major in Mechanical Engineering and Materials Science**

The major requirements are included in the minimum total of thirty-two courses listed under the general requirements and departmental requirements. Specific courses which must be included are Engineering 72, 75, 83, 101, and 123; Mechanical Engineering 115, 126, 136, 141, and 150.

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# University Administration

## General Administration

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Suydam Osterhout, M.D., *Associate Dean, Admissions*  
M. Henderson Rourk, M.D., *Director, Continuing Medical Education*  
Delford L. Stickel, M.D., Ph.D., *Director, Postgraduate Medical Education*  
Shirley K. Osterhout, M.D., *Assistant Dean for Student Affairs*  
Charles B. Johnson, Ed.D., *Associate University Registrar and Registrar, Medical Center*  
Ann M. Rimmer, *Administrative Assistant to the Dean of Medical and Allied Health Education*  
Thomas E. Frothingham, M.D., *Director, Area Health Education*

### Office of Duke University Hospitals

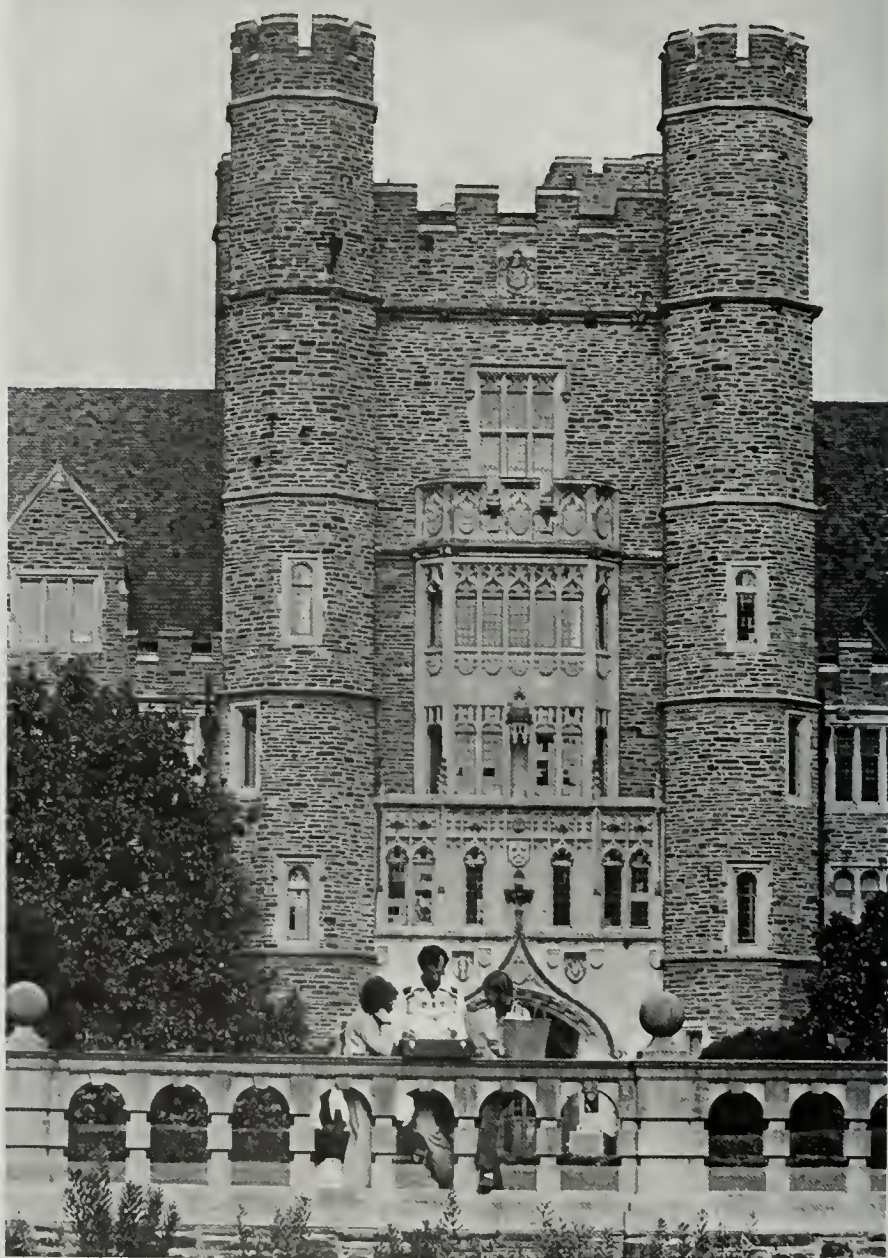
Roscoe R. Robinson, M.D., *Associate Vice President and Chief Executive Officer*  
Richard H. Peck, M.H.A., *Administrative Director, Duke Hospital*

Delford L. Stickel, M.D., *Associate Director (Medical)*  
Wilma A. Minniear, R.N., M.S.N., *Director of Nursing Services*  
Wallace E. Jarboe, *Director, Logistics and Management—Duke North*  
J. Peyton Fuller, A.B., *Associate Director and Controller*  
Richard L. Jackson, M.A., *Director of Personnel*  
Robert D. Metcalf, M.H.A., *Assistant Administrative Director*  
Carmen J. Rodio, B.A., *Assistant Administrative Director*  
Michael J. Schwartz, M.H.A., *Assistant Administrative Director*  
Kenneth E. Wheeler, M.H.A., *Assistant Administrative Director*





# General Information



# History

In 1924, James Buchanan Duke established the Duke Endowment, and thus made possible the creation of Duke University.

I have selected Duke University as one of the principal objects of this trust because I recognize that education, when conducted along sane and practical, as opposed to dogmatic and theoretical, lines is, next to religion, the greatest civilizing influence. I have selected hospitals as another of the principal objects of this trust because I recognize that they have become indispensable institutions, not only by way of ministering to the comfort of the sick, but in increasing the efficiency of mankind and prolonging human life . . . I very much hope that the people will see to it that adequate and convenient hospitals are assured in their respective communities . . . It is to these rural districts that we are to look in large measure for the bone and sinew of our country.

The School of Medicine and Duke Hospital, then a 400-bed facility, were opened in 1930 under the leadership of the first dean, Dr. Wilburt C. Davison. Today the hospital, with over 900 beds, is one of the largest private hospitals in the South. Duke University Medical Center has become a leader in contemporary medicine; by its continued dedication to educational programs, it has been closely involved in the development of the allied health field.

Programs in hospital administration and dietetics were initiated at the Medical Center in 1930. Programs in several disciplines dealing primarily with the laboratory aspects of clinical medicine began soon afterward. Due to marked advances in the field of medicine, new allied health programs were developed in the early 1960s to assist in the many medical specialties. Today there are over 400 students enrolled in Duke University allied health programs.

The Division of Allied Health Education of the School of Medicine officially represents the interests of these health-related educational programs by being the liaison with the entire medical complex. It coordinates all student and faculty activities within the Allied Health Education Building and provides for such varied educational services as the planning and evaluation of courses and circulation of instructional materials.

# Resources for Study

**Libraries.** The Perkins Library, among the finest university libraries in the country, contains over 3,000,000 volumes and 4,700,000 manuscripts. About 100,000 volumes are added annually. Separate departmental and professional school libraries provide notable collections in several disciplines.

The Medical Center Library/Communications Center is located in the Seeley G. Mudd Building, midway between the north and south medical center campuses. The Seeley G. Mudd Building also contains the Medical Center Bookstore and the Searle Center for Continuing Education.

The Medical Center Library attempts to provide all informational services and collections necessary to further educational, research, and clinical activities in the medical field. The collection of approximately 164,000 volumes and 2,850 current journal subscriptions is freely available for use by Medical Center students and personnel; study accommodations for 500 readers include extensive provisions for audiovisual learning. The library also includes the Trent Collection which is unsurpassed in the Southeast as a resource for study of the history of medicine. A branch collection of books and journals is maintained in the Nanaline B. Duke Medical Sciences Building.

The Medical Center Library is open: Monday through Friday, 8:30 A.M. to midnight; Saturday, 8:30 A.M. to 6:00 P.M.; Sunday, 12:00 noon to midnight Summer and holiday hours are as announced.

Director: Warren P. Bird, M.S. (Columbia, 1964), *Associate Professor of Medical Literature*; Curator of the Trent Collection: G.S.T. Cavanagh, B.S., B.L.S. (McGill, 1951), *Professor of Medical Literature*.

The library in the Durham Veterans Administration Medical Center contains over 3,000 books and receives 245 journals. It also supplies a reference and bibliographic service to both staff and residents. In addition, literature searches are made upon request.

**The Medical Center Bookstore.** This bookstore offers a wide selection of biomedical textbooks and reference books, as well as an assortment of laboratory and clinical instruments and office supplies. Facilities for browsing in a pleasant atmosphere are available, as are special individualized services. The bookstore is open: 8:30 A.M. to 5:00 P.M., Monday through Friday. Manager: Ansel M. Peak, B.A.

**The Searle Center for Continuing Education in the Health Sciences.** This center provides accommodations for conferences, symposia, lectures, and meetings to support the continuing education activities of the Medical Center. Provisions have been made for banquet and food service arrangements to complement the meeting facilities.

**The Media Learning Laboratory.** Located in the Allied Health Education Building, this facility has ten study carrels equipped to handle audiovisual materials, including slides, videotapes, and 8mm. loop films. Through this laboratory individuals may also obtain audiovisual materials from both the Duke University and Veterans Administration Medical Centers.

**Audiovisual Educational Facilities.** Duke University Medical Center Division of Audiovisual Education and the Veterans Administration Medical Center Medical Media Production Service have production facilities in medical art, photography, and television. These serve the allied health programs by providing all types of audiovisual materials for teaching, research, and patient care. A television link exists to provide for transmission of educational programs from Duke University Medical Center to the Veterans Administration Medical Center. Instruction in the production and use of audiovisual materials is a part of the course of instruction in several allied health programs.

**Computing Facilities.** The Duke University Computation Center provides faculty and students with a facility for research and instruction in computing. It is presently equipped with an IBM 370 Model 138 which is connected by microwave to an IBM Twin Model 165 located at the Triangle Universities Computation Center (TUCC) in the Research Triangle Park. In addition to the University



computation center there are four medium-speed terminals, several low-speed keyboard terminals, and forty-two IBM 5100 stand alone mini-computers available on the campus. The mini-computers are in clusters of seven and are in six locations on the campus.

**Hospitals.** Duke University Hospital, a 916-bed facility, has a dual purpose of providing both patient care and professional education. Comprehensive diagnostic and treatment facilities are provided at various levels of patient care ranging from intensive to minimal care units. Private, semiprivate, and ward accommodations are utilized by the more than 30,000 patients admitted each year. Special diagnostic and treatment units such as the cardiac catheterization laboratory, hemodialysis laboratory, and the hyperbaric oxygenation chamber are also housed in the hospital. Outpatient services include the public clinics, private clinics, and the emergency service. Duke Hospital is fully accredited by the Joint Committee on Accreditation of Hospitals and is approved for internship and residency training by the Council on Medical Education of the American Medical Association.

The Durham Veterans Administration Medical Center is located within walking distance of the Duke University Medical Center. All full-time professional staff members of the hospital are also members of the faculty of the Duke University School of Medicine. The Veterans Administration Medical Center, a 492-bed facility, provides the Duke University Medical Center with an excellent opportunity for closely integrated student teaching and house staff training.

Other patient care facilities directly affiliated with the Medical Center include the Lenox Baker Cerebral Palsy and Crippled Children's Hospital of North Carolina, a 40-bed residential rehabilitation center for children; Highland Hospital, Asheville, North Carolina, a 114-bed psychiatric facility; and Sea Level Hospital, a 72-bed general hospital.

Several of the allied health programs have affiliations with other hospitals and medical institutions for clinical instruction.

**Instructional Facilities.** In 1971, the Veterans Administration opened a 15,000 square foot, two-story Allied Health Education Building. It provides a number of classrooms, laboratories, and offices especially designed for education in allied health fields. Special emphasis has been placed upon the utilization of audiovisual materials in the instruction of students, which include the self-instructional media learning laboratory, closed-circuit television, and other support facilities.

## Student Life

**Living Accommodations.** Because of the shortage of residential space, students enrolled in allied health certificate programs are not eligible for dormitory accommodations. A limited number of apartments are available in the Central Campus apartment complex. Suitable living arrangements are extremely limited in nearby areas. Students planning to live off campus should make arrangements in advance of admission date in order to be assured accommodations. Information concerning housing is provided on request by the Central Campus Office, Department of Housing Management, 217 Anderson Street, Durham, North Carolina 27705.

**Dining Facilities.** Several dining facilities located in and near the Medical Center are available to students. In the Duke University Union Building, there are two cafeterias and a dining room. There are also cafeterias in the Graduate Center and the Veterans Administration and Duke hospitals.



**Student Aid.** Duke University recognizes the responsibility of students and their families to provide funds according to their ability to achieve the educational objective. Students are encouraged to pursue every available source of support through their local and state student assistance programs.

All programs are approved for veterans education benefits (G.I. bill) for those who are eligible. Some of the programs have limited student support available through stipends or special scholarships.

Financial aid is available through Duke in limited amounts in the form of loans. Duke University is a lender under the Federally Insured Guaranteed Student Loan Program. A Graduate and Professional Schools Financial Aid Service (GAP-SFAS) form from applicants and their parents (and spouse, if applicable) is required in addition to the Duke University Financial Aid Application. A copy of the student's (and spouse's, if applicable) federal income tax return for the previous taxable year is required. In the case of the dependent student, a copy of the parent's federal income tax return for the last taxable year is also required. Duke University reserves the right to decline to approve loan applications for those applicants who do not have a satisfactory credit history. U.S. citizenship or permanent residence visa is required of all students receiving loans through the school.

It is the responsibility of recipients of financial aid to keep the Medical Center Office of Financial Aid informed of any outside financial assistance they may receive. It must be understood that Duke reserves the right to reconsider its offer of financial assistance in the event of a major outside award to a recipient. No financial aid funds may be used during a period when the recipient is not involved with work toward the degree or certificate. Part-time or special students are not eligible for financial aid.

Students who have been accepted for matriculation are sent financial aid applications if they have indicated a desire for such assistance in the admissions application. Annual reapplication is required of all financial aid recipients.

A ceiling of \$12,000 in student loans is in effect for all allied health students. The Medical Center recognizes that a student should not borrow more money than could realistically be repaid from earnings after graduating. Thus, a student is not allowed to borrow more than \$12,000 for all educational loans including the money borrowed from other institutions. This restriction is for Duke administered funds only and does not prohibit a student from obtaining funds elsewhere. For example, a student in health administration can expect to borrow a maximum of \$12,000 for undergraduate and graduate educational expenses. Exceptions up to \$14,000 may be made on an individual basis, Dean's approval required, for students enrolled in master's degree programs.

*Basic Educational Opportunity Grant (BEOG)* is a federally funded grant for students with financial need who have not earned a baccalaureate degree and are enrolled in any postsecondary educational program. A special application is required and may be obtained from a high school guidance counselor or any financial aid office.

*North Carolina Student Incentive Grant (NCSIG)* is available to residents of North Carolina who are enrolled in any postsecondary educational program in North Carolina. The applicant must demonstrate substantial financial need and must not have earned a baccalaureate degree. Application deadline is 1 April for the following academic year. Application forms may be obtained from high school guidance counselors or any financial aid office.

*North Carolina Legislative Tuition Grant* is a direct grant of \$300 from the state to each North Carolinian enrolled in a private educational institution in North Carolina. The student must be studying toward the first baccalaureate degree. No application is required.

*North Carolina Educational Loan Program.* The North Carolina Department of Human Resources administers the Educational Loan Program for domiciliaries of North Carolina pursuing training in certain health professions who agree to practice their specialties as qualified professionals in underserved areas or programs of the state. Some of the fields of study supported are medical technology and physical therapy. Factors considered in awarding loans: ability to complete a training program; motivation to fulfill program goals; financial resources available to the applicant from other sources; and ability to meet domiciliary requirements. Loan amounts are \$1,000 per year; they are renewable depending on length of curriculum; and recipients agree to cancel their obligations by practice in shortage areas or programs of North Carolina. A personal interview is required only with the initial application and must be scheduled in December or January prior to the fall or summer for which funds are needed. For further information, contact the Educational Loan Program, P.O. Box 12200, Raleigh, North Carolina 27605.

Every effort will be made to assist the student with tuition and living expenses within the framework of school policies which may be in effect at the time. However, as funds are limited, prior indebtedness will not be given favorable consideration as part of the student's budget. A financial aid brochure and student budgets for each allied health program are available, upon request, in the spring of each year. Any applicant having further questions may write to the Coordinator, Financial Aid, 123 Davison Building, Box 3005, Duke University Medical Center, Durham, North Carolina 27710.

**Student Health Service.** The facilities of the Student Health Service Clinic located in the Pickens Building are available year-round to all allied health students. The clinic provides outpatient treatment, routine laboratory and x-ray examinations necessary for the diagnosis of acute medical and surgical problems, and many other services. A separate fee for this service is assessed for each student. Participation is mandatory for all Duke students unless a waiver is granted by the appropriate dean. The coverage described above does not extend to spouses and children. However, dependents are eligible to use the facilities of the Duke University Medical Center, as are all members of the community, but they are responsible for health costs incurred. The Student Health Service Clinic is open from 8:00 A.M. to 7:00 P.M., Monday through Friday; 9:00 A.M. to 2:00 P.M., Saturday, and closed on Sundays. On Sundays, a doctor is available at the University Infirmary on East Campus, 2:00 P.M. to 5:00 P.M., for the evaluation of illnesses which cannot wait until regular Student Health Service hours. The Sunday Clinic at the University Infirmary on East Campus is available only during the spring and fall semesters of the regular academic year. It is closed during summer sessions. The facilities of the University Infirmary on East Campus are available to allied health students from the opening of the University in fall until graduation day in spring.

**Student Health Insurance.** In order to provide twenty-four hour protection to students for accidents and sicknesses not covered by the Student Health Services, the Student Accident and Sickness Insurance policy is available. Benefits include payment of hospitalization and surgical and medical fees. Persons are covered on and off campus, at home, while traveling between home and school, and during interim vacation periods. The premiums for a student (and spouse or family) for the year 1979-80 will be more fully described in the insurance brochure sent from the bursar's office. If at the time of matriculation, students do not have a sickness and accident policy, it is mandatory that they purchase this insurance.

**Athletic Events.** All students paying the full Duke University undergraduate tuition are issued Duke University identification cards and may attend all home intercollegiate athletic contests on a first-come, first-served basis. Graduate

students and those enrolled in the certificate program may purchase a book of tickets for regular season home football and basketball games. All tickets are sold on a first-come first-served basis. The ticket office is located in Cameron Indoor Stadium.

**Judicial System and Regulations.** Duke University expects and requires of all its students full cooperation in developing and maintaining high standards of scholarship and conduct. Each student is subject to the rules and regulations of the University which are currently in effect or which are, from time to time, put into effect by the appropriate authorities of the University. At the same time, the individual is responsible for decisions and choices within the framework of the regulations of the community as Duke does not assume in *loco parentis* relationships.

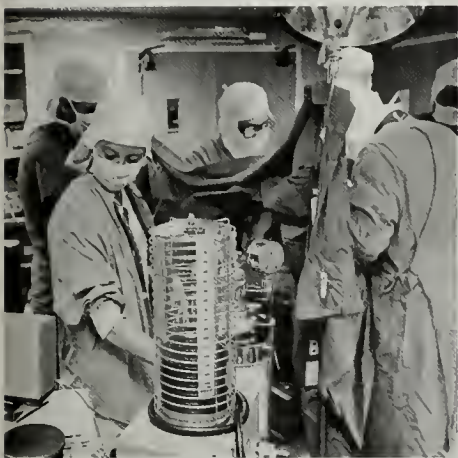
Any student, in accepting admission, indicates a willingness to subscribe to and be governed by these rules and regulations and acknowledges the right of the University to take such disciplinary action, including suspension or expulsion, for failure to abide by these regulations or for other conduct adjudged unsatisfactory or detrimental to the University.

A copy of the Allied Health Judicial System including a code of ethics, rules of conduct, and judicial procedures will be provided each student and is included in the appendix to this bulletin.

#### **Policy of Nondiscrimination**

Duke University does not discriminate on the basis of race, color, national and ethnic origin, or handicap, or sex, in the administration of educational policies, admission policies, financial aid, employment, or any other university program or activity. It admits qualified students of any race, color, national and ethnic origin to all the rights, privileges, programs, and activities generally accorded or made available to students.







# Academic Procedures and Information



## Admissions

Admissions to all Duke University educational programs are reviewed by an appropriate admissions committee. Students matriculating in the various allied health programs must meet the admission standards of that program.

## Grading and Grade Requirements

Final grades on performance in academic work are sent to students after the examinations at the end of the fall and spring semesters.

**Passing Grades.** Passing grades are *A*, exceptional; *B*, superior; *C*, satisfactory; and *D*, low pass. A passing grade may be modified by a plus or minus. A *Z* may be assigned for the satisfactory completion of the first semester of a two-course sequence. This permits an instructor to assign an earned grade for the entire year during the grading period for the second course of the sequence.

*The D Grade.* Although the *D* grade represents low pass, no more than two courses passed with *D* grades may be counted among the thirty-two courses required for graduation.

**Failing Grades.** A grade of *F* or *U* (see pass/fail option below) indicates that the student has failed the course, which is recorded on the student's record. If the course is taken again, a second entry of the course and the new grade earned is made on the record, but the first entry is not removed.

**Pass/Fail Grading Option.** With the consent of the instructor and program director, a student may choose to be graded on a pass/fail basis in one elective course each semester or summer session.

A student enrolling in a course on a pass/fail basis completes all the work of the course but receives either a pass, (*P*), or fail, (*U*), in lieu of a standard grade. After the first two weeks of classes in any semester, no student may change to or from a pass/fail basis. A pass grade may not subsequently be converted to a regular letter grade nor may the course be retaken on a regular credit basis.

**Grades When Absent from Final Examination.** In all cases in which a student is absent from a final examination, an *X* is received instead of a final grade. If the student does not present an acceptable explanation for the absence to the Office of the Associate Dean for Allied Health Education within forty-eight hours after the scheduled time of the examination, the *X* is converted to an *F*. If the absence is excused by the associate dean the student arranges with the instructor

for a makeup examination. An *X*, not cleared by the end of the semester following the examination missed, is converted to an *F*. See the section on Final Examinations and Excused Absences.

**Grades for Incomplete Work.** If because of illness or other emergency a student's work in a course is incomplete, an *I* may be received for the course instead of a final grade. Incomplete courses must be completed before the close of the succeeding semester; otherwise, the *I* is converted to an *F*. Seniors must complete all courses before graduation. A student whose work is incomplete and who is also absent from the final examination receives an *X* for the course.

For the purpose of determining if a student satisfies continuation requirements, an *I* is counted as failing to achieve satisfactory performance in that course.

## Graduation and Continuation Requirements

**Continuation Requirements.** A student must achieve a satisfactory record of academic performance and make satisfactory progress toward graduation each semester. To remain in the University a student must not fail two or more courses in any semester. A student who, for any special reason, has been permitted to enroll for three or fewer courses must pass all courses.

Students are reminded that in cases where continuation is in question, incomplete work in any course is counted as a failure to achieve satisfactory performance in that course. Such courses must be completed in time for final grades to be submitted to the registrar no later than the day preceding the opening of the spring semester or 15 June in the summer.

Any student excluded under the provisions of this regulation may request to have the case reviewed by the associate dean, Allied Health Education.

**Requirements for Degree.** To be graduated a student must pass a minimum of thirty-two courses (including the sixteen courses required for admission) and all courses prescribed in the program of study. Of the courses required for graduation, no more than two courses with *D* grades will be accepted.

**Residence Requirements.** At least sixteen semester-courses must be completed satisfactorily at Duke. This must include the final four semesters.

## Commencement

Graduation exercises are held once a year in May, when degrees are conferred on, and diplomas issued to those who have completed requirements by the end of the spring semester. Those who complete degree requirements by the end of the fall semester or the end of a summer term become eligible to receive diplomas dated 1 September or 30 December, respectively. There is a delay of about one month in the mailing of September and December diplomas because the diplomas are mailed after final approval by the Academic Council and the Board of Trustees. Any persons who receive diplomas dated 1 September or 30 December may return for the commencement weekend and participate in the graduation exercises in May following the date of the diploma.

## Eligibility for Academic Honors

To determine eligibility for academic honors, only letter grades earned at Duke, with the exception of the *P* (pass) grade, enter into the calculation of the average.









**Dean's List.** In recognition of academic achievement, juniors who carry a normal academic load and earn a *B* average or higher in the two semesters of an academic year are placed on the Dean's List if six semester-courses are presented in which grades other than *P* have been awarded and there has been no incomplete or failing grade within the academic year.

**Class Honors.** Students in the junior year who carry a normal academic load and earn a *B+* average on all work for the year are eligible for class honors provided that six semester-courses are presented in which grades other than *P* have been awarded and there has been no incomplete or failing grade within the academic year.

**Graduation Honors.** Full-time or part-time students who earn the following averages for all work taken at Duke are graduated with honors: a *B* average earns a degree *cum laude*; a *B+* average earns a degree *magna cum laude*, and an average of *A* or above earns a degree *summa cum laude*.

## Course Information

The unit of credit for academic work is the semester-course. Double-courses and half-courses are recognized.

**Transfer Credit.** Duke credit may be granted for course work satisfactorily completed at other regionally accredited, degree-granting institutions. Courses in which grades of less than *C-* have been earned are not accepted for transfer credit. Semester-course credit awarded at Duke for satisfactorily completed courses cannot, of course, be directly equated with semester-hour or quarter-hour credits. A semester's work accepted as a normal course load by the other institution transfers as a block of four course units at Duke, provided the courses taken at the other institution are acceptable by Duke as Duke course equivalents or electives. Ordinarily, transfer students will not be awarded more than four course units for one semester's work unless they have satisfactorily completed more than the normal course load at the institution from which they transferred. All courses approved for transfer credit are listed on the student's permanent record at Duke (unless the student has received a degree) but grades earned in such courses are not recorded. Courses taken at other institutions are evaluated by the Medical Center registrar.

Students who transfer to Duke may receive credit for a maximum of two years of work at other institutions of approved standing. No credit is given for work completed by correspondence, and credit for no more than two semester-courses is allowed for extension courses.

**Course Load and Eligibility for Courses.** The normal and expected course load each semester is four to five semester-courses. To take fewer than four or more than five semester-courses in any semester, a student must have the approval of the program director and the associate dean for Allied Health Education. No student, however, may take more than six courses in any semester.

**Course Audit.** With the written consent of the instructor and the program director, a full-time degree student is allowed to audit one or more courses in addition to the normal program. After the first two weeks of classes in any semester, no student classified as an auditor in a particular course may take the course for credit, and no student taking a course for credit may change classification to an auditor. A student may not repeat for credit any course previously audited. Auditors submit no daily work, take no examinations, and receive no credit for courses.

**Course Changes After Classes Begin.** Students, with the approval of the program director, may drop and add courses during the first two weeks of classes. Courses added during the second week of classes require, in addition, the approval of the appropriate instructor.

Students may drop a course without penalty until the time midsemester grades are assigned if they are clearly carrying a course overload. Factors such as poor health or necessary outside work are also considered in permitting withdrawal from courses without penalty. A *W* is entered on the permanent record in lieu of a grade in all cases where withdrawal without penalty is approved. After the time limit has expired, withdrawal from any course will ordinarily result in a grade of *F*. Courses discontinued prior to midsemester without approval will also be assigned an *F*.

## **Class Attendance and Excused Absences**

Responsibility for class attendance rests with the individual student. Students are expected to attend classes regularly and punctually and must accept the consequences of failure to attend. An instructor is privileged to refer students to the associate dean for Allied Health Education for suitable action if, in the opinion of the instructor, their work or that of the class suffers because of absences. When excessive absences result in a student's failure to carry a normal course load, the associate dean for Allied Health Education, after a conference with the student, will determine whether the student may continue enrollment in the college.

Absences from required classes and tests ordinarily are excused only for illnesses certified by a proper medical official of the University, and for authorized representation of the University in out-of-town events. Officials in charge of groups representing the University in such events are required to submit names of students to be excused to the Office of the Associate Dean for Allied Health Education forty-eight hours before absences are to begin.

## **Final Examinations and Excused Absences**

Customarily, an examination is the final exercise in an undergraduate course, but it is understood that not all courses profit from this process. Therefore, unless departmental policy stipulates otherwise, the conduct of the final exercise is determined by the instructor, except that a final written examination may not exceed three hours in length and a final take-home examination may not require more than three hours in the actual writing.

Absences from final examinations are excused by the associate dean for Allied Health Education only in exceptional circumstances, such as illness certified by a medical official of the University or other conditions beyond the control of the student. A student who misses a final examination must notify the Office of the Associate Dean for Allied Health Education within forty-eight hours after the scheduled time of the examination. Failure to so notify and to present an acceptable reason for absence from the examination will result in the student's receiving an *F* in the course.

## **Changes in Status**

**Withdrawal and Readmission.** A student who wishes to withdraw from the University must give official notification to the associate dean for Allied Health Education. Withdrawals at student initiative prior to the Thanksgiving recess in the fall semester or prior to 15 April in the spring semester are coded as voluntary, and a *W* is entered in lieu of a grade for each course. Voluntary withdrawals after



these dates are permitted only in the event of emergencies beyond the control of the student.

Applications for readmission are made to the Medical Center registrar. Each application is reviewed by the admissions committee of the program to which the student applies. A decision is made on the basis of several criteria including the applicant's academic record at Duke, the prospects of completing requirements for graduation, the student's citizenship record at Duke, evidence of increasing maturity and discipline, the degree of success attendant upon activities during the time away from Duke, and finally the applicant's relative standing among the group of students applying for readmission.

**Leave of Absence.** A student in good standing may apply in writing to the associate dean for Allied Health Education to take a leave of absence for one or two semesters. The application must come before the end of the fall semester for a leave of absence during the spring semester, and before 15 July for a leave of absence during the fall semester. If the leave is approved, the student must keep the associate dean informed of any change of address.

**Full-Time and Part-Time Degree Status.** Normally, undergraduate students who are candidates for degrees are expected to enroll for a normal course load each semester. A student who needs to change from full-time status, or from part-time to full-time status, must have the approval of the program director and the associate dean for Allied Health Education. For special reasons approved by the program director and the associate dean, a full-time degree student who is qualified to continue may register in a part-time degree status for no more than two courses.

## Admission

Students seeking admission to the Bachelor of Health Science degree programs must have completed two years of study at an accredited institution. In addition, they must have a minimum of sixteen course equivalents (sixty semester hours) of transferable credit including at least one course in English, three in natural science, three in social sciences or history, and one in humanities. Additional requirements are listed in the description of the program.

## Other Information

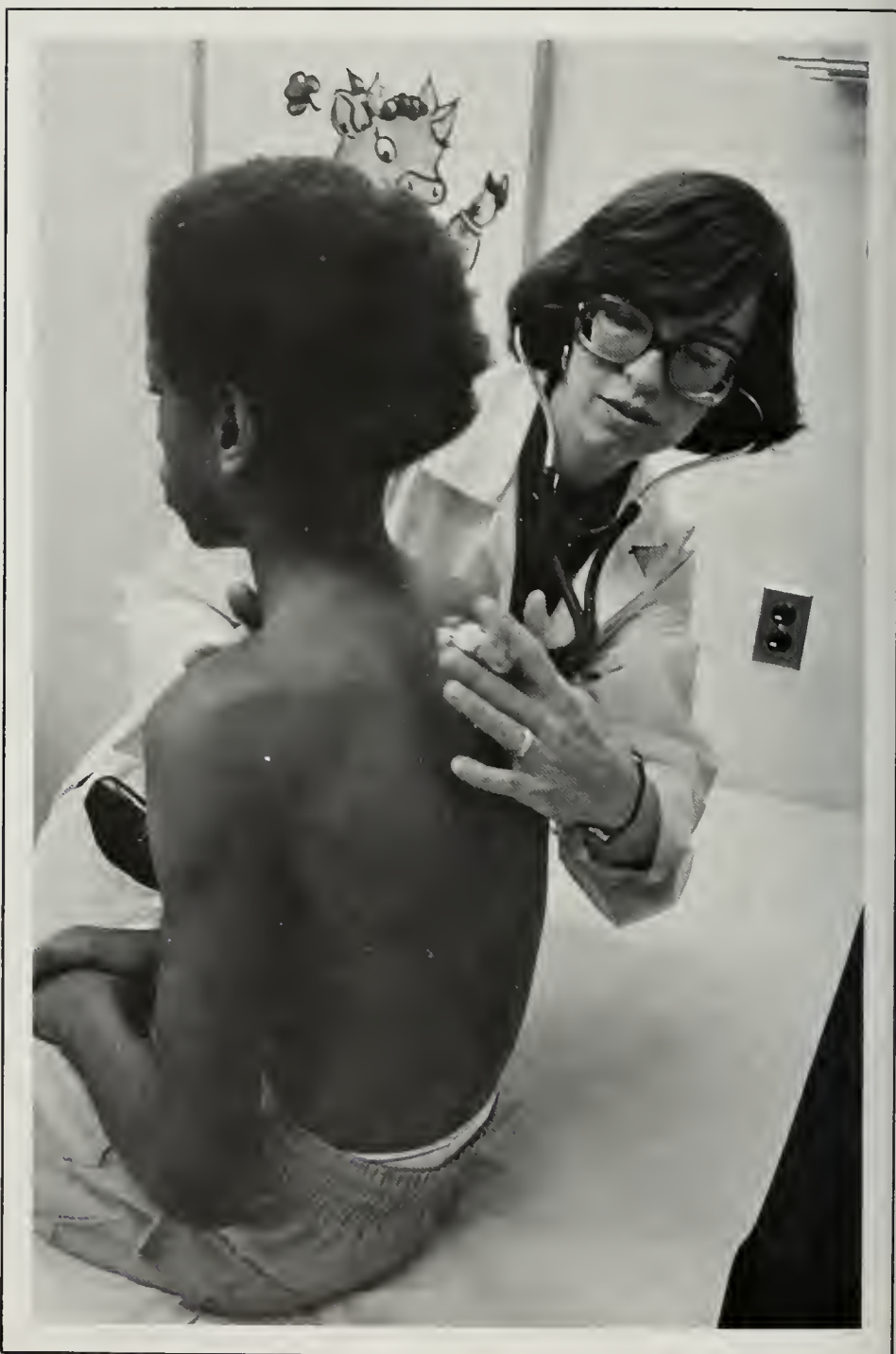
**Release of Student Records.** No confidential information contained in student records (academic or otherwise) is released to non-University persons or to unauthorized persons on the campus without the consent of the student. Consent is evidenced by each student's signing a form which authorizes the release of personal data. The form may provide for the release of information to one or more persons or agencies only, or it may be a blanket release. Blank forms to authorize or revise the permission are available in the office of the program directors.

**Identification Cards.** Undergraduate students are issued two-part identification cards which they should carry at all times. The cards are the means of identification for library privileges, University health services, athletic events, and other University functions or services open to them as University students. Students will be expected to present their cards on request to any University official or employee.

The cards are not transferable, and fraudulent use may result in loss of student privileges or suspension. A student should report the loss of this card immediately to the registrar's office. The cost of a new identification card is \$5.



# Financial Information



# Tuition and Fees\*

**Estimated Expenses for an Academic Year.** Certain basic expenditures such as tuition, board, and room are to be considered in preparing a student's budget. These necessary expenditures, with a reasonable amount allotted for miscellaneous items, are shown below:

Tuition	\$4,230 per year
Books, uniforms, and supplies	\$200-\$300 per year
Food	\$140 per month
Laboratory Fees	See Individual Course Requirements
Lodging	\$160 per month
Student Health Fee	\$115 for 9 months \$172.50 for 12 months
Student Accident and Sickness Insurance	\$95.30 per year (single) \$222.10 per year (married)
Miscellaneous (travel, laundry, clothing, etc.)	\$130 per month

**Debts.** No records are released and no students are considered by the faculty as candidates for graduation until they have settled with the bursar for all indebtedness.

Bills may be sent to parents or guardians provided the bursar has been requested in writing to do so. Failure to pay all university charges on or before the times specified by the University for that semester will bar the student from class attendance until the account is settled in full.

**Registration Fees and Deposits.** On notification of acceptance, baccalaureate degree students are required to pay a nonrefundable first registration fee of \$25.\* Students in the Physician's Associate Program are required to make a deposit of \$75. The deposit will not be refunded to accepted applicants who fail to matriculate. For those who do matriculate, the deposit is applied to the cost of tuition.

**Late Registration.** Students who register in either semester at a date later than that specified by the University must pay to the bursar a fee of \$25.

**Part-time Students.** In the regular academic year, students who register for no more than two courses in a semester are classified as part-time students. Part-

\*These are estimated figures only. Tuition and fees are subject to change without notice.

time students are charged at the following rates: One course, \$529; half-course, \$264.50; quarter-course, \$132.25; one course plus laboratory or preceptorship, \$705. Registration for more than two courses requires payment of full tuition. Graduate students registered for undergraduate courses will be assessed three units for nonlaboratory courses and four units for laboratory courses. Nondegree men and women beyond usual college age who are on review for admission to degree programs, as designated by the Office of Continuing Education, pay fees by the course whether the course load is one, two, or three courses.

**Auditors.** Auditing of one or more courses without charge is allowed students paying full fees, provided that the consent of the instructor is obtained. In 1978-79 students who were enrolled for one or two courses could audit other courses by payment of \$40 for each course audited. With the consent of the appropriate instructor and the registrar, graduates of Duke could audit undergraduate courses for \$40 each course.

**Duke Employees.** Full-time employees with one or more years of service with the University may request permission to take for credit or audit up to two courses during any one semester. Permission may be granted based on the individual merits and circumstances of each application. Employees receiving permission to take such courses for credit will be charged one-half of the tuition rate for part-time students as shown above. Courses may be audited free. Employees are required to submit a formal application by 1 December or 15 July.

**Fees for Transcripts.** Requests for transcripts of academic records should be directed to the Office of the Medical Center Registrar. A minimum fee of \$2, payable in advance, is charged for a single copy.

**Student Health Fee.** All regular full-time undergraduate students (those registered for three courses or more) and all regular full-time graduate and professional school students (those registered for nine units or more and for three units if the preliminary examination has been passed) are required to pay a health fee that is nonrefundable after the first day of classes in the semester. The only exceptions to this requirement are the following reasons: (1) if the student is covered by a spouse's or parents' Duke University employee Blue Cross-Blue Shield insurance or (2) if, as a veteran, the student is eligible for and elects to use the Veterans Administration Medical Center services. A waiver form will be provided and must be completed and returned with the payment of tuition if the student elects to waive the fee for the aforementioned two reasons.

The student health fee entitles the student to outpatient treatment through the Student Health Service or inpatient treatment in the East Campus Infirmary. The health fee is not to be confused with the Duke Student Accident and Sickness Insurance (the premium for this insurance is minimized due to the existence of the Student Health Services) which covers a large number of medical costs above and beyond the treatment available through the Student Health Services. The identification of a separate student health fee in no way changes the policy concerning the Student Accident and Sickness Insurance. A Student Health brochure will be distributed at the time the semester enrollment card is picked up at the beginning of the term.

**Student Accident and Sickness Insurance.** At time of matriculation, students must provide proof of coverage under an accident and sickness insurance policy or purchase the Duke Student Accident and Sickness Insurance policy. This insurance policy provides protection twenty-four hours per day during the twelve-month term of the policy of each student insured. Students are covered on and off the campus, at home, or while traveling between home and school and during interim vacation periods.

# Refunds

If a student withdraws, tuition is refunded according to the following schedule:

<i>Withdrawal from Baccalaureate Programs</i>	<i>Refund</i>
Before classes begin	Full amount
During first or second week	80%
During third to fifth week	60%
During sixth week	20%
After sixth week	None

<i>Withdrawal from Certificate Programs*</i>	<i>Refund</i>
Before classes begin	Full amount
During first week	80%
After first week of classes	None

\*Course fees for students in certificate programs are payable on a yearly basis unless prior arrangements are made with the associate dean for Allied Health Education.





# Bachelor of Health Science Degree Programs



Duke University Medical Center awards a Bachelor of Health Science degree to students who complete either the Anesthesia, Medical Technology, Pathologist's Assistant, or Physician's Associate program.

## Anesthesia

### ADMINISTRATION

Chairman, Department of Anesthesiology: Merel H. Harmel, M.D., *Professor of Anesthesiology*

Adviser, Anesthesiology Program: Bruno J. Urban, M.D., *Professor of Anesthesiology*

Program Director, Anesthesiology Program: Lawrence R. Stump, B.S.N., C.R.N.A.

Education Coordinator, Anesthesiology Program: Joe R. Williams, M.S., C.R.N.A.

Clinical Coordinator, Anesthesiology Program: Mary M. Gardner, B.A., C.R.N.A.

Program Instructors, Anesthesiology Program: Leola A. Glenn, B.A., C.R.N.A., Raymond Tobias, B.S.N., C.R.N.A.

Clinical Teaching Staff, Anesthesiology Program: Instruction and supervision are provided by the attending anesthesiologists and the staff nurse anesthetists.

In 1931, Duke University Medical Center's Department of Anesthesiology established a program for registered nurses to further their study in anesthesiology. The students learn about the physiopharmacological effects of anesthesia and related drugs, the proper techniques for their administration, and the management of the entire treatment plan for patients requiring anesthesia. Upon successful completion of the required qualifying examination, graduates become certified registered nurse anesthetists (C.R.N.A.s).

**Program of Study.** The program beginning each fall requires twenty-four months to complete with the basic theoretical instruction given during the first two semesters. After fifteen weeks, students begin clinical practice while continuing their didactic studies. The second year is devoted to clinical anesthesia. It is during this time the students begin to work with cases that require more skill. Seminars are held weekly and examinations are given monthly.

**Requirements for Admission.** Applicants must satisfy the general admission requirement for the Bachelor of Health Science Degree. Additionally, applicants must:

1. be a graduate of an approved school of professional nursing;
2. possess a valid license to practice professional nursing in the United States;
3. have at least one year of professional nursing experience. This experience should preferably be in the acute care setting. Applicants are selected from baccalaureate, diploma, and associate degree nursing programs provided they have met the lower division requirement of sixty semester hours.

**Application Procedures.** Applications must be submitted by 1 February for fall admission. The following are necessary to complete application procedures:

1. a completed Duke University Medical Center Allied Health Application including a nonrefundable fee of \$25;
2. official transcripts from all colleges and universities and other academic institutions attended;
3. Scholastic Aptitude Test scores from the College Entrance Examination Board;
4. three letters of recommendation—two *must* be professional nursing references (your present supervisor or director of nurses). Students and recent graduates may use instructors or directors.

**Special Expenses.** Textbook and instruments for the entire course are approximately \$325. The cost of uniforms for the second year is approximately \$50.

**Financial Aid.** A stipend of \$600 per month during the summer sessions is paid. No stipend is paid during the academic year. In addition, scholarships are available to nurses registered in North Carolina. Please refer to the section on student aid.

**Course of Instruction.** Students must complete courses in the following:

### Junior Year

<i>Fall Semester</i>		<i>Course weight</i>
ANE 100	Anatomy and Physiology	3
ANE 105	Chemistry and Physics	$\frac{1}{2}$
ANE 110	Cardio-Respiratory Physiology	1
ANE 115	Physical Assessment	$\frac{1}{2}$
<i>Spring semester</i>		<i>Course weight</i>
ANE 120	Fundamentals of Anesthetic Practice 1	2
ANE 130	Pharmacology for the Nurse Anesthetist	2
ANE 160	Introduction to Clinical Anesthesia	1
<i>Summer I*</i>		
ANE 190	Clinical Anesthesia (Orthopaedics)†	
<i>Summer II*</i>		
ANE 191	Clinical Anesthesia (Neurosurgery)	
ANE 198	Clinical Anesthesia (Ophthalmology)	

### Senior Year

<i>Fall semester</i>		<i>Course weight</i>
ANE 192	Clinical Anesthesia (Thoracic-Cardiovascular)	2
ANE 193	Clinical Anesthesia (General Surgery)	2
ANE 170	Fundamentals of Anesthetic Practice II	1
<i>Spring semester</i>		<i>Course weight</i>
ANE 194	Clinical Anesthesia (Obstetrics/Gynecology)	2
ANE 195	Clinical Anesthesia (Urology)	2
ANE 175	Fundamental of Anesthetic Practice III	1
<i>Summer III*</i>		
ANE 196	Clinical Anesthesia (Plastic-maxillofacial)	

\*Summer I, II, III, and IV are clerkships which are required for certification but not the B.H.S.  
†Clinical rotations may be taken for four- or eight-week intervals. Course credit will be assigned as follows: four weeks equals 1 course credit, eight weeks equals 2 course credits.

# Medical Technology

## ADMINISTRATION

Chairman, Department of Pathology: Robert B. Jennings, M.D., *Professor of Pathology*  
Medical Director, Medical Technology Program: Frances K. Widmann, M.D., *Associate Professor of Pathology*  
Program Director, Medical Technology Program: Margaret C. Schmidt, MT(ASCP), M.A.T., *Associate in Pathology*  
Education Coordinators, Medical Technology Program: Cynthia L. Wells, MT(ASCP), M.Ed.; Linda H. Lunn, MT(ASCP)SC, B.S.; Kenni B. Beam, MT(ASCP)M.S.  
Program Instructor, Medical Technology Program: Iris W. Long, MT(ASCP), B.S.

## FACULTY MEMBERS

Associate Professors: Dolph Klein, Ph.D.; Peter Zwadyk, Ph.D.  
Assistant Professors: Peter H. Anderson, Ph.D.; William H. Briner, B.S.; Robert L. Habig, Ph.D. Judith Andersen, M.D.; Emily Reisner, Ph.D.; Frank Sedor, Ph.D.; Robert Waite, M.D., Ph.D.  
Associates: John A. Bittikofer, Ph.D.; Philip A. McHale, Ph.D.  
Instructors: Edwin M. Bumgarner, MT(ASCP), M.P.H.; Ardell M. Proctor, MT(ASCP), M.S.; Robert F. Wildermann, C(ASCP), M.S.  
Clinical Teaching Staff: John Carr, B.S.; Betty R. Crews, MT(ASCP); Jean T. Crute, MT(ASCP); Robert L. Hoover, B.S.; Miriam Marshall, MT; Irene A. Wyatt, MT(ASCP); Lydia Tiosejo, MT(ASCP), M.S.; Patricia Beckjord, MT(ASCP)SBB, M.S.; Tabbie Bolk, MT(ASCP)SBB; Mary Ann Dotson, MT(ASCP), B.S.; Ann Stuart, MT, B.S.; Mary Vickers, MT(ASCP), B.S.; Nancy V. Moore, MT(ASCP), B.S.

**Program of Study.** The Medical Technology Program is a two-year baccalaureate program with courses taught during the academic year. Terms one and two of the junior year consist of four required courses each. The senior year is spent in didactic courses and student and clinical laboratories of Duke University Medical Center facilities. Upon successful completion of this two-year program, the student is awarded the B.H.S. degree, and a certificate in medical technology.

**Curriculum.** Students must complete the following:

### Junior Year

Fall semester		Course weight
PTH 107	Human Pathology	1
PTH 112	Instrumentation	1
PTH 121	Blood and Body Fluids	1
PHS 102	Basic Human Physiology	1
Spring semester		Course weight
PTH 113-114	Immunochemistry/Medical Chemistry	2
PTH 120	Immunology and Immunohematology	1
PTH 132	Medical Microbiology	1

### Senior Year

Fall semester		Course weight
PTH 122	Parasitology	½
PTH 123	Mycology	½
PTH 126	Laboratory Supervision and Management	1
PTH 151	Clinical Microbiology	½
PTH 153	Clinical Immunology-Serology	½



PTH 155	Clinical Blood and Body Fluids	$\frac{1}{2}$
PTH 157	Clinical Chemistry	$\frac{1}{2}$
<i>Spring semester</i>		<i>Course weight</i>
CFM 110	Medical Uses of Computers	1
PTH 124	Educational Techniques for the Health Professional and Seminar	1
PTH 152	Clinical Microbiology	$\frac{1}{2}$
PTH 154	Clinical Immunology-Serology	$\frac{1}{2}$
PTH 156	Clinical Blood and Body Fluids	$\frac{1}{2}$
PTH 158	Clinical Chemistry	$\frac{1}{2}$

The above curriculum provides sixteen course credits in the junior and senior years and should satisfy requirements for students who wish to be eligible for national certification.

**Prerequisites for Admission.** Applicants must satisfy the general admission requirements for the Bachelor of Health Science degree and must have earned at least a C+ average in their science courses. A total of four courses (sixteen semester or twenty-four quarter hours) is required in chemistry including at least one course in organic chemistry. Quantitative analysis will be accepted in lieu of the second semester of organic chemistry. Four courses (sixteen semester or twenty-four quarter hours) are required in biology. If possible, one course should be in physiology and one in general bacteriology. If the applicant presents only three courses in biological science, the fourth course must be taken prior to the senior year. One course in college mathematics is also required. Students who meet the general B.H.S. admission requirements, but lack the additional chemistry or biology credits will be considered for admission; such deficiencies must be corrected before entrance to the senior clinical year curriculum may be granted.

**Application Procedures.** Applications must be submitted by 1 June of the year for which admission is requested, and must contain the following:

1. a completed Duke University Medical Center Allied Health application form, including a nonrefundable fee of \$25;
2. official transcripts from all colleges and universities or other academic institutions attended;
3. Scholastic Aptitude Test scores from the College Entrance Examination Board;



4. three letters of recommendation—one from a professor of biological sciences, one from a professor of chemistry, and one from a college adviser.

**Special Expenses.** Textbook and manual expenses for the first year are approximately \$200; for the second year, \$275. The cost of uniforms for the second year is approximately \$150. Courses with a laboratory may be assessed a laboratory fee of \$50 per course.

**Transportation Required.** The use of facilities other than Duke and Durham Veterans Administration Medical Centers requires transportation. It is the responsibility of each medical technology student to provide a means of transportation to and from the facilities selected for learning experiences in both the junior and senior years. Although a few sites may be within bicycling distance, most are not.

**Financial Aid.** A small amount of University loan funds is available, on the basis of demonstrated financial need. Please refer to the section on Student Aid.

## Pathologist's Assistant

### ADMINISTRATION

Chairman, Department of Pathology: Robert B. Jennings, M.D., *Professor of Pathology*  
Director, Pathologist's Assistant Program: Philip C. Pratt, M.D., *Professor of Pathology*  
Associate Director, Pathologist's Assistant Program: Kenneth R. Broda, Ph.D., *Associate*  
Assistant Associate Director, Pathologist's Assistant Program: Gerald A. Phipps, B.S., B.H.S., P.A.

### FACULTY ADVISORY BOARD

Professors: Donald B. Hackel, M.D.; Robert B. Jennings, M.D.; William W. Johnston, M.D.; Philip C. Pratt, M.D.; Joachim R. Sommer, M.D.; F. Stephen Vogel, M.D.  
Associate Professor: Dolph O. Adams, M.D., Ph.D.

### FACULTY

Associate Professors: Frances K. Widmann, M.D.; Peter Zwadyk, Ph.D.  
Assistant Professors: Robin Vollmer, M.D.; Jane Gaede, M.D.  
Associates: J. Phillip Pickett, H.T.(ASCP); Margaret C. Schmidt, MT(ASCP), M.A.T.; Philip A. McHale, Ph.D.  
Page Hudson, M.D., *Chief Medical Examiner, State of North Carolina and Professor of Pathology, University of North Carolina Medical Center.*  
Instructors: Ronald L. Mitchell, A.B.A., *Chief Medical Media Production Service, V.A. Medical Center*; Cynthia L. Wells, MT(ASCP), M.Ed.; Kenni B. Beam, MT(ASCP) M.S.; Linda H. Lunn, MT (ASCP), SC, B.S.; Nathan A. Brinn, HT(ASCP), B.S.; James G. Lewis, B.H.S., P.A.

The Pathologist's Assistant Program is designed to meet the growing need for trained personnel to assist the anatomic pathologist in the areas of surgical and autopsy pathology including histopathology and medical photography. The Duke Pathologist's Assistant Program was the first program to educate such individuals, and the acceptance of Duke graduates by the medical community has led to the development of many similar programs. Upon completion of the program, students will have acquired knowledge and skills which will permit them to fill important roles in academic, forensic, or private pathology environments.

**Program of Study.** The program is two calendar years in duration and includes four semesters of practical and academic training and two successive three and one-half month summer externships. The externships, consisting of practical training in autopsy pathology, surgical pathology, forensic pathology, and histopathology, are conducted principally within the Department of Pathology, although a limited number of externships are available in affiliated hospitals. Upon successful completion, the Bachelor of Health Science degree and a certificate of achievement are awarded.

**Curriculum.** Students must complete the following:

## Junior Year

<i>Fall semester</i>		<i>Course Weight</i>
ANA 101	Human Anatomy	1
PHS 102	Basic Human Physiology	1
PTH 102	Histologic Technique and Interpretation	1
PTH 121	Blood and Body Fluids	1
PTH 107	Human Pathology	1
<i>Spring semester</i>		<i>Course Weight</i>
PTH 200	Pathology	2
PTH 160	Autopsy Technology	1½
PTH 161	Medical Photographic Technology	1

## Senior Year

<i>Fall semester</i>		<i>Course Weight</i>
PTH 110	Systemic Pathology	½
PTH 165	Surgical Pathology	1½
PTH 167	Autopsy Practicum	1½
PTH 183	Special Autopsy Techniques and Procedures	1
<i>Spring semester</i>		<i>Course Weight</i>
PTH 111	Systemic Pathology	½
PTH 164	Clinical Diagnostic Methods	1
MIC 101	Introductory Microbiology	½
PTH 166	Surgical Pathology	½
PTH 196	Student Autopsy Seminar	½
Elective*		1

\*Electives may be chosen from courses offered by the Department of Pathology or from undergraduate junior or senior level courses approved by the department

In addition to B.H.S. requirements, practical rotations during the summers are required for certification.

**Prerequisites for Admission.** Applicants must satisfy the general admission requirements for the Bachelor of Health Science degree. Selection is based on the applicant's academic record, test scores, experiences, and evidence of general aptitude and capability as indicated by the letters of recommendation. The Pathologist's Assistant Program does not require patient contact experience and accepts applicants who do not have past health-related experience.

**Application Procedures.** Applications must be completed by 1 May of the year for which admission is requested and must contain the following:

1. a completed Duke University Medical Center Allied Health application form, including a nonrefundable fee of \$25;
2. official transcripts from the armed forces and all high schools, colleges, or other academic institutions attended;
3. Scholastic Aptitude Test (SAT) scores from the College Entrance Examination Board; and
4. three letters of recommendation—one from a science professor and the remaining from individuals who have knowledge of the student's professional or educational qualifications.

All applicants will be notified by 1 June regarding admission to the program. Requests for further information and application forms should be directed to the Director, Pathologist's Assistant Program, Department of Pathology, Duke University Medical Center, Durham, North Carolina 27710.

**Special Expenses.** Books, automobile registration, health insurance, and uniforms will cost approximately \$250.



**Financial Aid.** Those students demonstrating need may be eligible for student loans and scholarships explained in the section on student aid.

## Physician's Associate

### PHYSICIAN'S ASSOCIATE PROGRAM ADMINISTRATION

Chairman: E. Harvey Estes, Jr., M.D., *Department of Community and Family Medicine*

Program Director: Michael Hamilton, M.D., *Chief of Division for Health Team Development and Assistant Professor of Community and Family Medicine*

Associate Director: Reginald D. Carter, Ph.D., *Assistant Professor of Community and Family Medicine*

Clinical Coordinator: Dan Domizio, R.P.A./C.

Associate Clinical Coordinators: Joyce Nichols, R.P.A./C.; Pierce Lewis, B.S., R.P.A./C.; William Smith, R.P.A./C.; James Hill, R.P.A./C.; Lester Robertson, R.P.A./C.; Marcia Herman-Giddens, R.P.A./C.

Student Counselors: Leaf Diamant, M.A. and Joe Kertesz, M.A.

### TEACHING STAFF AND FACULTY

Michael Hamilton, M.D., *Anatomy*; Reginald D. Carter, Ph.D., *Physiology*; Philip McHale, Ph.D., *Physiology*; Frances Widmann, M.D., *Pathology*; Andrew Finn, Pharm.D., *Pharmacology and Therapeutics*; Suydam Osterhout, M.D., *Microbiology*; Margaret Schmidt, MT(ASCP), M.A.T., *Laboratory Science*; Donald Calbreath, Ph.D., *Clinical Chemistry*; Thomas T. Thompson, M.D., *Radiology*; David Harrison, M.D., *Electrocardiology*; Michael Hamilton, M.D., *Patient Assessment*; James Wyngaarden, M.D., *Professor and Chairman, Department of Medicine and Staff, Internal Medicine*; David Sabiston, M.D., *Professor and Chairman, Department of Surgery and Staff, Surgery*;



Samuel Katz, M.D., *Professor and Chairman, Department of Pediatrics and Staff, Pediatrics*; Keith Brodie, M.D., *Professor and Chairman, Department of Psychiatry and Staff, Psychiatry and Behavioral Sciences*; William Kane, M.D., *Family Medicine*; Leaf Diamant, M.A. and Joseph Kertesz, M.A., *Communication and Interactive Skills*; E. Harvey Estes, M.D.; Valerie Staples, R.P.A./C; Robert Sullivan, M.D.; Mr. James Bernstein, *Community Medicine*.

In addition to the above, the program calls upon teaching resources of affiliated community practitioners.

#### ADVISORY COMMITTEE TO THE PHYSICIAN'S ASSOCIATE PROGRAM

The Advisory Committee to the Physician's Associate Program meets twice yearly to review and advise the program's administration concerning broad goals of the program. This committee consists of Duke faculty, community practitioners, nurses and nurse practitioners, health care consumers, health planners, and P.A. students and graduates.

In 1965 Duke University Medical Center began an innovative program designed to prepare highly educated and well trained assistants for physicians. The program originated when clinicians at the Medical Center realized that they could enhance their productivity by safely and effectively delegating many of their tasks and responsibilities to nonphysicians, primarily exmilitary corpsmen with previous health-related education and experience. Dr. Eugene A. Stead, Jr., then chairman of the Department of Medicine at Duke, recognized the potential of the corpsmen experience and concluded that paramedical personnel might be trained to provide primary health care under the supervision of a physician. In developing the Department of Community and Family Medicine, Dr. E. Harvey Estes, Jr. foresaw that the midlevel practitioners would help increase consumer access to health services, and extend the time and skills of the physician in providing competent, sensitive, and comprehensive health care.

The physician's associate possesses a broad understanding of medicine and health care. Men and women are chosen for the program on the basis of their humanistic perspective, demonstrated commitment to providing health care, and their academic potential.

On completion of the two-year program, graduates are prepared to assist in the evaluation and management of common health problems, including both acute self-limited problems and chronic illnesses such as hypertension and diabetes. Recognizing the intrinsic relationship between emotional and physical health, the program stresses competence in the exploration of psychosocial concerns. Graduates are expected to have a basic fund of knowledge pertaining to health needs of infants and children, young and middle-aged adults, and geriatric patients. Physician associates also provide patient care services such as diagnostic and therapeutic procedures, wound suturing, cast application, and basic laboratory procedures.

Upon successful completion of the program, Duke University Medical Center awards the student a Bachelor of Health Sciences degree and a Physician's Associate Certificate.

**Program of Study.** The curriculum is twenty-four consecutive months in duration and is designed to provide an understanding of the rationale for skills used in physical diagnosis and problem assessment. It focuses primarily upon the common problems seen in ambulatory care settings, so that the student is able to utilize and understand the various diagnostic, therapeutic, and supportive measures used by the primary care physician. The first nine months are devoted to the basic medical and behavioral sciences and the remaining fifteen months to clinical training in a variety of practice settings. The rigorous curriculum requires people who have had college level education and experience in a health-related discipline.

The preclinical curriculum is integrated in such a way as to introduce the student to medical sciences as they relate to clinical problems. Learning strategies include self-instructional packages, teaching patients, lectures, seminars, labora-

tories, and small-group encounters. Clinical medicine and patient evaluation are taught using the problem-oriented medical record format. The psychosocial aspects of clinical practice are emphasized as well as the physical aspects of disease processes.

As part of the clinical practicum students are required to take rotations in inpatient medicine, surgery/emergency services, family medicine, pediatrics, and obstetrics/gynecology. The final ten weeks of clinical training is spent away from Duke in a primary care setting.

Because the clinical teaching is carried out in many practice settings, students should plan on being away from the Durham area for part of their clinical experience.

**Curriculum.** Before proceeding into the clinical phase of the curriculum, students must satisfactorily complete the following:

### Preclinical Schedule

<i>Fall semester</i>		<i>Course weight</i>
CFM 103	Medical Science for Clinical Practice I	1½
MED 110	Patient Evaluation I	1
ANA 103	Functional Human Anatomy	1
PTH 115	Laboratory Procedures and Electrocardiography	1
CFM 101	Perspectives on Health	½
		<u>½</u>
		5
<i>Spring semester</i>		<i>Course weight</i>
CFM 104	Medical Science for Clinical Practice II	1½
MED 111	Patient Evaluation II	½
PTH 116	Laboratory Procedures	½
MIC 101	Introductory Microbiology	½
RAD 101	Introductory Radiology	½
SUR 101	Basic Surgical Principles	1
CFM 105	Human Growth and Development	½
		<u>½</u>
		5

After satisfactory completion of all basic science courses, students must complete the following:

### Clinical Schedule

General Medical Inpatient Service	2 courses	8 weeks
General Surgical Outpatient/Emergency Service	2 courses	8 weeks
Obstetrics and Gynecology	1 course	4 weeks
Pediatrics	2 courses	8 weeks
Family Medicine	<u>1 course</u>	<u>4 weeks</u>
	8 courses	32 weeks

In addition to the above courses required for the B.H.S. degree, students must complete:

Four elective courses required for certificate	16 weeks
	Subtotal: 48 weeks
Primary Care Preceptorship†	<u>10 weeks</u>
	Total: 58 weeks

†This rotation is taken only during the summer of the last year.

**Prerequisites for Admission.** To be eligible for the program academically, applicants must have completed 60 semester hours of college credit from an institution whose credits are transferable to Duke University and which include



one English course, one humanities course, three courses in the social sciences, and three courses in the natural sciences (two of which must be chemistry and biology). Of equal importance to the academic requirement is a minimum of one year of health care experience. This experience should involve direct patient contact and may be gained as a nurse, patient care assistant, military corpsman, or in other related fields such as medical technology and physical therapy.

**Application Procedures.** Application materials and course bulletins are mailed to prospective applicants from 1 June through 15 December each year. Applications are accepted by the University no earlier than 1 September and no later than 15 January for the new class which enters in late August each year. Applications must contain:

1. a completed Duke University Medical Center Allied Health application form, including a nonrefundable fee of \$25;
2. official transcripts from all colleges or other academic institutions attended;
3. Scholastic Aptitude Test scores of the College Entrance Examination Board (applicants who possess baccalaureate degrees may submit a request for a waiver of this requirement with their application);
4. three letters of recommendation, one from an immediate supervisor, one from a physician with whom the applicant has worked, and one from an acquaintance of five or more years.

**Selection Factors.** The program has a specific interest in enrolling students from diverse social, ethnic, and educational backgrounds. Emphasis is placed upon personal maturity, quality of health care experience, dedication to the health field, and intellectual capacity. Information submitted by each applicant is carefully reviewed by the Committee on Admissions, and selected applicants are invited to Duke University for personal interviews. These interviews usually take place in mid-March of each year; students are chosen from among those interviewed. All applicants will be notified by 15 April regarding admission to the program. Requests for application forms and information should be directed to the Coordinator of Admissions, Physician's Associate Program, P.O. Box CFM-2914, Duke University Medical Center, Durham, North Carolina 27710.

**Special Expenses.** Books for the program will cost approximately \$300, equipment \$270, and uniforms \$70.



**Financial Aid.** The financial aid office works closely with students to secure loans. Due to the limited amount of money available, requests are considered individually and approved on the basis of financial need. Part-time employment for students is available in many areas of the Medical Center. Frequently such employment can net students about \$150 per month and yet not jeopardize their education. Students must comply with the academic schedule and are prohibited from working more than twenty hours per week.

## Courses of Instruction

Courses numbered from 150 through 189 either list specific prerequisites or have as prerequisite the completion of the junior year in one of the programs.

Double numbers separated by a hyphen indicate that the course is a year course and must normally be continued throughout the year if credit is to be received.

### ANATOMY

**ANA 101. Basic Human Anatomy.** A lecture-laboratory discussion course that examines human morphology and the fundamental relationships among the neurologic, musculoskeletal, cardiovascular, gastrointestinal, respiratory, renal, and reproductive systems. The course includes cadaveric presentations of every major region of the human body. Intended primarily for students in allied health programs. One course. *Hylander and staff*

**ANA 103. Functional Human Anatomy.** Through lectures, laboratories, videotape demonstrations, and cadaveric presentations, students are able to identify human morphological structures and describe the fundamental relationships that exist among the musculoskeletal, articular, cardiovascular, gastrointestinal, respiratory, renal, reproductive, and neurological systems. Application of anatomical principles to interpretation of clinical signs and events is emphasized as well as the use of anatomical landmarks in the examination of various body regions. Students are encouraged to develop an anatomical vocabulary suitable for communicating clinical observations to other health professionals. The course is taught jointly by the Departments of Surgery and Anatomy. One course. *Bassett, Carter, and staff*

### ANESTHESIOLOGY

**ANE 100. Anatomy and Physiology for the Nurse Anesthetist.** A lecture and discussion course that examines the structure and function of human cells, tissues, and organs with emphasis on the implications for anesthesiology. This course also includes the appropriate pathology that may influence anesthetic management. Three courses. *Williams, Glenn, and staff*

**ANE 105. Chemistry and Physics for the Nurse Anesthetist.** The lecture-discussion format is used to present the principles of chemistry and physics that are applicable to the practice of anesthesia. Topics included are matter and atomic structure, molecular motion, energy, gases and gas laws, fluids and fluid flow, volatile agents and vaporizers, organic chemistry, biochemistry, fire and explosion, electrical hazards, and other topics. One course. *Williams, Tobias, and Lee*

**ANE 110. Cardio-Respiratory Physiology.** A comprehensive presentation of respiratory and related cardiovascular physiology which is designed to provide amplification and reinforcement of ANE 100. One course. *J. Williams*



**ANE 115. Patient Assessment.** The general assessment of patients using skills of interviewing, history-taking, and physical examination are taught through a sequence of learning experiences including lectures, demonstrations, and simulated patient encounters. Students meet in groups of five with one clinical instructor for bedside experience in obtaining a meaningful data base. One-half course. *Urban and staff*

**ANE 120. Fundamentals of Anesthetic Practice I.** This course provides the student with a basic knowledge of narcosis, uptake and distribution of anesthetic agents, and patient management during and after anesthesia. Anesthetic risk, accidents, and sequelae are integrated into the theory, operation, and maintenance of anesthetic equipment. Additionally, anesthetic techniques including endotracheal procedures, ventilators, positions, hypothermia, and monitoring are presented utilizing lectures, demonstrations, and practice. Also discussed are the legal, historical and ethical aspects of anesthesiology. Two courses. *Williams, Glenn, and staff*

**ANE 130. Pharmacology for the Nurse Anesthetist.** Pharmacology presents preanesthetic evaluation and medication with emphasis on the pharmacological implications of premedicant and accessory drugs. This course also includes the management of local, regional and subarachnoid anesthesia, the pharmacology of anesthetic agents and the related principles of chemistry and physics, the intravenous agents, muscle relaxants, and the therapeutic gases. Two courses. *Williams, Stump, and staff*

**ANE 160. Introduction to Clinical Anesthesia.** An orientation to the operating rooms and the anesthesia department at Duke University Medical Center is provided. Early in this course the student is primarily an observer of the daily routine and the administration of anesthesia. The student is also exposed to related areas in his/her orientation to the field of anesthesiology (recovery room, respiratory therapy, and obstetrics). As the course concludes the student participates in the administration of anesthesia to surgical patients. One course. *Urban and staff*

**ANE 170-175. Fundamentals of Anesthetic Practice II and III.** This course presents timely topics and issues in anesthesiology as well as a review of basic anesthesia theories and principles. Topics include: blood gas interpretation, monitoring techniques, new agents and techniques, anesthetic management for common and uncommon diseases. This is a continuous sequence which covers the entire academic year. One course each. *Williams and staff*

**ANE 190-199. Clinical Anesthesia Rotations.** The student rotates through the various surgical services while administering anesthesia under the constant supervision of the anesthesia staff. During ten rotations the student builds his or her level of skill in patient management, anesthetic techniques, and equipment. One to two courses each. *Urban and staff*

- 190. Clinical Anesthesia (Orthopaedics)
- 191. Clinical Anesthesia (Neurosurgery)
- 192. Clinical Anesthesia (Thoracic)
- 193. Clinical Anesthesia (General)
- 194. Clinical Anesthesia (Obstetrics and Gynecology)
- 195. Clinical Anesthesia (Urology)
- 196. Clinical Anesthesia (Plastic-Maxillofacial)
- 197. Clinical Anesthesia (Otolaryngology)
- 198. Clinical Anesthesia (Ophthalmology)
- 199. Clinical Anesthesia (Pediatrics)

## COMMUNITY AND FAMILY MEDICINE

**CFM 101. Perspectives on Health.** An overview of factors which impact the planning, delivery, and utilization of health care services. Issues considered include cultural expectations, behavioral characteristics of illness, political and economic implications of health policy, epidemiological methods, distribution of resources, and ordering of priorities. Research and techniques of health education and preventive medicine are discussed as part of a critique of the present acute care, specialty oriented system. One-half course. *Staples and staff*

**CFM 103-104. Medical Sciences for Clinical Practice.** A system of self-instructional tutorials, enrichment sessions, and clinical correlations provide the student an opportunity to learn the rationale underlying the delineation and management of common clinical problems seen by primary care practitioners. Presentations in anatomy, physiology, biochemistry, pathology, and pharmacology are unified and integrated with clinical medicine, using an organ systems approach. The course provides the student with an interesting, intelligent, and pragmatic account of modern concepts in medicine and medical sciences. Three courses. *Carter, Hamilton, and staff*

**CFM 105. Human Growth and Development.** This course explores developmental trends pertinent to various life stages. Special attention is paid to infancy and early childhood, adolescence, family dynamics, sexual and marital health, aging, and death and dying. The class will involve lectures, small group discussions, and readings. Emphasis will be placed on the impact of stresses common to various life stages on the total health of individuals and families. One-half course. *Diamant, Staples, and staff*

**CFM 110. Medical Applications of Computers.** This lecture and demonstration course will introduce the student to the use of digital computers in a medical center. The general operating principles of computer systems will be presented with some specific examples of programming techniques. Ongoing medicine and medicine-related projects within the Duke Medical Center-Veterans Administration Medical Center complex will be demonstrated; specific emphasis will be placed on the application of computer techniques to the clinical laboratory. One course. *McHale and Lunn*

**CFM 150. General Community Medicine.** During this rotation students spend time with physicians in community practice, observing and participating in both office-based and hospital care. Students gain experience in doing both problem-specific and complete evaluations and through follow-up visits have an opportunity to monitor the results of therapy. Students learn to appreciate the impact of a patient's total environment on their health status. One or two courses. *Staff*

**CFM 151. Family Practice.** A four-, or eight-week clinical experience surveying the components of family practice, including emotional conflicts and interpersonal relationships with the patient and other members of the family unit. Through experience in interviewing and examining patients, the student is exposed to the multifaceted approach of understanding and treating physiologic and sociologic components of disease processes. In this situation, an understanding of the common diseases treated by primary care practitioners and the aspects of the unique relationship a physician's associate experiences with private patients, their physician, and other health team members is developed. One or two courses. *Kane and staff*

**CFM 180. Primary Care Preceptorship.** This rotation is required of all students during the final ten weeks of their training and provides a transition

between the role of the student and graduate physician's associate. Students are encouraged to select a preceptor in the area of their anticipated employment and, during this extended period of time, to explore the tasks and team aspects of functioning as a midlevel practitioner. Students will provide health services consonant with their backgrounds, clinical experiences, and the needs of the particular practice setting. Required for certificate. Two and one-half courses. *Estes, Hamilton, and staff*

**CFM 191. Independent Study.** This special four-week course enables students to select individually with program administrators a series of objectives and to develop a program that can reasonably be expected to achieve those objectives. One course. *Estes, Hamilton, and staff*

## MEDICINE

**MED 110-111. Patient Assessment and Interactive Skills.** The general assessment of patients using skills of interviewing, history-taking, and physical examination are taught through a sequence of learning experiences including lectures, demonstrations, and simulated patient encounters. Students assess and develop their interviewing and interactive skills through communication exercises and attitude and value exploration. Students meet in groups of five with one clinical instructor for bedside experience in obtaining a meaningful data base. They are taught how to record patient data using the problem-oriented medical record format and how to present such information to the supervising physician. One and one-half course. *Hamilton, Diamant, Kertesz, and staff*

**MED 150. Inpatient Medicine.** An eight-week full-time required clinical rotation in which the student learns to apply basic medical knowledge to the problems and situations encountered on an inpatient service. By collecting a data base, formulating a complete problem list, participating in daily rounds, and participation in the management of patient problems, the student develops an awareness and understanding of the multiple aspects of disease processes and becomes familiar with therapeutic regimen and dispositions relative to specific disease states. The student will present the data base of each new patient to the supervising physician or attending rounding physician in a coherent, concise fashion. Two courses. *Staff*

**MED 151. Outpatient Medicine.** During this rotation, the student learns to apply basic medical knowledge to the common problems and situations encountered on an outpatient/emergency service. Experience may include long-term follow-up of patients with chronic disease, emergency triage and management, and evaluation of acute self-limited problems. This rotation occurs in an institutional as opposed to a private setting. One or two courses. *Staff*

**MED 152. Intensive Care.** A four-week rotation that acquaints the student with the acute and intensive care required for patients who have undergone major and complex surgical procedures, suffered massive and severe trauma, cardiorespiratory collapse, or other life-threatening medical crises. Emphasis is placed on ventilatory assistance, cardiopulmonary resuscitation, fluid and electrolyte replacement, and acid-base balance under resident physician supervision. One course. *Staff*

**MED 153. Cardiology.** During the rotation students will become familiar with the presentation, evaluation, and management of cardiovascular disorders, including acute and chronic problems. Students will gain experience performing the medical history and physical examination and will learn appropriate diagnostic procedures and therapeutic regimens, including drug therapy, alterations in life



patterns (smoking, diet, exercise, etc.), and surgical intervention. One or two courses. *Cardiology Staff*

**MED 155. Endocrinology.** A four- or eight-week rotation designed to acquaint the student with endocrinological diseases. The emphasis is placed on obtaining the defined endocrine data base and appropriate treatment of the disease. Students attend all daily rounds and conferences while on the service. They are taught the indications, limitations, and methods of performing diagnostic procedures including: glucose, tolbutamide, and arginine tolerance tests; thyroid function tests; and urinary steroid determinations. Students help educate patients with endocrine diseases about their disease processes, diagnostic evaluations, and therapies. One or two courses. *Endocrinology Staff*

**MED 156. Gastroenterology.** During this four- or eight-week rotation students study the diagnosis, pathophysiology, and essentials of therapy of various gastroenterologic problems. They learn to perform and interpret the following diagnostic procedures: nasogastric intubations and gastric analyses (both with and without fluoroscopy), secretin tests, rectal and small bowel biopsies, proctoscopies, sigmoidoscopies, and gastroscopies. They also learn to care for endoscopic and biopsy instruments and biopsy specimens. One or two courses. *Gastroenterology Staff*

**MED 157. Hematology-Oncology.** During this four- or eight-week rotation the students become familiar with the presentation of hematologic and oncologic problems, including many which are serious and life-threatening. A major objective for the student will be learning to relate supportively to the feelings and needs of terminally ill patients. The student will also gain experience with various diagnostic procedures, including white cell differential, bone marrow aspiration, lumbar puncture, paracentesis and thoracentesis. Students will become familiar with the principles of blood transfusion. One or two courses. *Hematology Staff*

**MED 159. Allergy and Respiratory Disease.** A four- or eight-week rotation that provides an indepth exposure to patients with respiratory and allergic conditions. The problems encountered by patients who have respiratory ailments are studied in detail as are the associated special history and physical examination techniques and diagnostic and therapeutic procedures (including allergy skin testing, eosinophilic nasal smear counts, sputum evaluation, chest X-ray, and ventilatory therapy). The student participates in daily rounds and teaching conferences on respiratory diseases and gains a knowledge of the therapeutic regimen, their indications, availability, reliability, and limitations in the treatment of respiratory and allergic diseases. One or two courses. *Pulmonary Staff*

**MED 160. Nephrology.** During this four- or eight-week rotation, the student learns to gather and record information in a problem-oriented manner about patients with renal and hypertensive diseases. The student becomes able to recognize the effects of disease, therapy, and education on the patient's course and plays a major role in patient education. The fundamentals of renal function, urinalysis, radiography of the chest, urinary system and bones, and the principle of dialysis are covered. One or two courses. *Nephrology Staff*

**MED 161. Neurology.** On this rotation, students learn about the presentation, evaluation, and management of patients with neurologic problems. The student develops an understanding of specialized history and physical techniques and diagnostic procedures, including electroencephalography, brain scan studies, pneumoencephalography, and central nervous system radiologic studies. Students also learn to relate supportively to patients whose symptoms may be frightening and/or have a serious prognosis. One or two courses. *Neurology Staff*



**MED 162. Rheumatology.** This course provides the student with an indepth exposure to rheumatologic disease. Students gain insight into the psychosocial adjustments necessitated by chronic, potentially disabling disease. Students also gain familiarity with diagnostic procedures, therapeutic regimens, and learn how to do a meticulous and thorough joint examination. One or two courses. *Rheumatic and Genetic Diseases Staff*

**MED 163. Dermatology.** During this rotation students gain familiarity with major classes of dermatologic diseases, ranging from acute self-limited problems to malignant conditions. Sensitivity to the negative effects of cosmetic disfigurement is stressed. Students gain experience with common diagnostic procedures and courses of treatment. One or two courses. *Tindall and Dermatology Staff*

**MED 165. Clinical Infectious Disease.** During this four-week rotation, the student learns to approach patients presenting with infectious diseases, to gather a data base from them, and to understand the manifestations of the illnesses and the rationale for therapy. One course. *Staff*

**MED 191. Independent Study.** This course is intended to allow students with particular interests in an area of internal medicine to structure a need-specific learning experience. Independent studies are arranged with the program staff and appropriate clinical faculty. One or two courses. *Staff*

## MICROBIOLOGY

**MIC 101. Introductory Microbiology.** An introduction to diagnostic microbiology covering such topics as microbial morphology, staining characteristics, growth requirements, diagnostic tests, and antibiotic susceptibility testing. The clinical aspects of such subjects as pyogenic cocci, gram negative sepsis and nosocomial infection, meningitis, venereal disease, enteric infection, anaerobic pathogens, tuberculosis, mycotic diseases, viral infections, and the use of antibiotics are also included. One-half course. *Osterhout*



## OBSTETRICS AND GYNECOLOGY

**OBG 150. Obstetrics/Gynecology.** During this rotation students learn about the health, needs, and concerns of women. Students learn about pregnancy, including prenatal care and management of labor and delivery. The student is expected to be fully familiar with the normal course of pregnancy and with common complications in order to provide educated and sympathetic support for the prospective mother. Students will also gain experience with common gynecologic concerns, including cancer detection, abnormal menstruation and bleeding, infections, and sexual dysfunction. Familiarity with the effectiveness, indications, and contraindications of various forms of contraception is a further objective. One or two courses. *Staff*

## OPHTHALMOLOGY

**OPH 150. Ophthalmology.** This is a four- or eight-week rotation reviewing the major ophthalmologic disease. Through lectures, teaching rounds, and learning special history and physical examination techniques, the student develops an expertise in determining visual fields, visual acuity, and oculotometry. The principles of refraction and the many medical and surgical therapeutic regimens available for treating ophthalmologic disorders are included. The student is also required to participate in the routine care of ophthalmologic inpatients and outpatients. One or two courses. *Staff*

## PATHOLOGY

**PTH 102. Histologic Technique and Interpretation.** The student is presented a wide background in tissue and cell morphology and physiology. Emphasis is placed on cellular and subcellular structures which help develop tissue types. A synopsis of current concepts of ultrastructure is related to those of light microscopy. Students learn to evaluate and interpret, under light microscopy, those features which distinguish one tissue from another. The interrelationships between cytology, histology, and organology is stressed. One course. *Broda and Phipps*

**PTH 107. Human Pathology.** The general categories of disease processes will be presented through specific diseases of organ systems. Diseases will be selected for presentation because they epitomize individual etiologic categories, and/or because they occur so commonly in the general patient population that it is important for the student to understand how the abnormal processes are translated into clinical events. One course. *Widmann and staff*

**PTH 110-111. Systemic Pathology.** Disease processes are studied via methods and techniques utilized in organ system dissection as they pertain to autopsy pathology specimens. Clinicopathologic correlation is stressed utilizing gross and microscopic examples of disease processes, case studies, lectures, and demonstrations. One course. Prerequisites: PTH 102, 107, 200. *Staff*

**PTH 112. Instrumentation.** This lecture/laboratory course includes the study of the theory, techniques, operation, and mathematics necessary for the application and use of instruments in the clinical laboratory. Examples of instruments and techniques studied include spectrophotometers, flame photometers, pH and blood gas analyzers, continuous flow analyzers, discrete analyzers, chromatography, and electrophoresis. A \$50 laboratory fee is anticipated. One course. *Bittikofer, Anderson, Wildermann, and Lunn*

**PTH 113-114. Immunochemistry/Medical Chemistry.** This course deals with clinical chemistry as it relates to health and disease. Topics included are: the body as an equilibrium system; organ systems in health and disease; and the

biochemical basis for and chemistry of diagnostic tests with discussions of utility, accuracy, special techniques, instrumentation, and quality control. Two courses. (May be taken concurrently.) PTH 113: *Wells, Lunn, and staff*; PTH 114: *Anderson, Lunn, and staff*

**PTH 115-116. Laboratory Procedures.** Students develop skills for performing routine hematologic, urinary, and microbiological procedures suitable for emergency or office/clinic practice. Lectures and discussions are concerned with clinical interpretation and appropriate applications of laboratory data and physiologic derangements which frequently produce abnormal laboratory values. A \$50 laboratory fee is anticipated. One course. *Widmann, Schmidt, and Long*

**PTH 120. Immunohematology.** A lecture/laboratory course presenting the immune response, both cellular and humoral. Other topics include: the antigens of erythrocytes, leukocytes, and other tissue sites, and the spontaneously occurring and acquired antibodies to them; collection, processing, and storage of blood for transfusion purposes. Laboratory sessions are designed to allow the student to utilize the lecture material in clinical applications. A \$50 laboratory fee is anticipated. One course. *Widmann and Wells*

**PTH 121. Blood and Body Fluids.** This course will consider in lecture and laboratory sessions, primary and secondary hematologic diseases, with full consideration of clinical diagnostic procedures to identify/characterize disorders of erythrocytes, leukocytes, platelets, and hemostatic mechanisms. Physiologic alterations and clinical laboratory findings related to urine, cerebrospinal fluid, joint fluid, and effusions will be included. A \$50 laboratory fee is anticipated. One course. *Widmann, Schmidt, and Long*

**PTH 122. Parasitology.** Lecture/self-instructional and correlative student laboratory sessions present information on epidemiology, life cycles, and identification procedures for the more common animal parasites which infect man. A \$50 laboratory fee is anticipated. One-half course. *Bumgarner and Wells*

**PTH 123. Mycology.** The mycology section presents a lecture/laboratory introduction to the medically significant pathogenic fungi, including morphology, laboratory identification, etiology of disease processes, and epidemiology. Lecture and correlative student laboratory sessions present information on epidemiology, morphology, and identification procedures for the pathogenic fungi. A \$50 laboratory fee is anticipated. One-half course. *Proctor and Beam*

**PTH 124. Educational Techniques for the Health Professional and Seminar.** This course is designed to prepare the student to communicate any form of material to students, patients, peers, and other health professionals. Topics include all elements of a learning system design, such as basic principles of learning, educational taxonomy and terminology, behavioral objectives, construction of evaluation tools, and task analysis. Audiovisual aid usage and construction are treated as well. Culminating the course, each student chooses a topic and submits an entire learning system design for the topic, and presents the material in a seminar period. One course. *Schmidt, Beam, and staff*

**PTH 126. Laboratory Supervision and Management.** Principles of group supervision, to include techniques of developing work patterns, designing laboratories, staffing laboratories, personnel relations, equipment evaluation and procurement, are presented. Cost analysis and inventory topics will be included. One-half of the course deals with group interpersonal relationships, and the other half with supervisory skills and techniques necessary for successful management. One course. *Wildermann, Beam, and staff*



**PTH 132. Medical Microbiology and Immunology.** This course presents a lecture/laboratory introduction to the morphology and physiologic activities of bacteria, as well as functional aspects of viruses. Extensive consideration is given to microorganisms in the etiology of disease, the interaction of host and invader, the epidemiology of nosocomial infections, and the mechanisms of antimicrobial therapeutic agents. The laboratory sessions will develop beginning expertise in isolating and identifying common pathogenic organisms, and in the techniques required for bacterial propagation, antibacterial susceptibility assays, environmental surveillance, and diagnostic techniques to demonstrate the presence of fungal, bacterial, and viral antibodies. Discussion of therapeutic implications are included. A \$50 laboratory fee is anticipated. One course. *Klein, Zwadyk, Proctor, Tiosejo, and Beam.*

**PTH 151-152. Clinical Microbiology.** Eight weeks of clinical education in diagnostic microbiology laboratories of both Duke and V.A. Medical Centers. Prerequisites: PTH 132, PTH 122, and PTH 123 (PTH 151-152, PTH 122 and PTH 123 may be taken concurrently). A laboratory fee of \$50 is anticipated. One course. *Klein, Zwadyk, Proctor, Tiosejo; Course Coordinator: Beam*

**PTH 153-154. Clinical Immunology-Immunoematology.** Eight weeks of clinical education is given in techniques and applications of principles in immunology and immunoematology. Prerequisites: PTH 120 and PTH 113. A laboratory fee of \$50 is anticipated. One course. *Widmann; Course Coordinator: Wells*

**PTH 155-156. Clinical Blood and Body Fluids.** Eight weeks of clinical education in the study of blood, urine, and body fluid elements and measurements. Recognition of hematological, coagulation, and urinary pathologies is stressed, and clinical laboratory examination techniques performed. Prerequisite: PTH 121. A laboratory fee of \$50 is anticipated. One course. *Widmann; Course Coordinators: Schmidt and Long*

**PTH 157-158. Clinical Chemistry.** Eight weeks of clinical education and practical training in methodology and instrumentation in the clinical chemistry laboratories at Duke and V.A. Medical Centers. Prerequisites: PTH 112 and PTH 114. A laboratory fee of \$50 is anticipated. One course. *Anderson and Bittikofer; Course Coordinator: Lunn*

**PTH 160. Autopsy Technology.** During this eight week on-the-job training period, students are introduced to autopsy dissection techniques and general anatomic pathology protocol. These include evisceration, organ block dissection, tissue preparation for histology, microscopic evaluation, and final protocol completion. Prerequisites: PTH 102, 107. One and one-half course. *Broda and Phipps*

**PTH 161. Medical Photographic Technology.** This course offers the student, via lecture and practical assignments, basic photographic theory and principles including, but not limited to, camera handling techniques, composition, exposure determination, and lighting with electronic flash. The student will be given the opportunity to become proficient in the photography of specimens both in situ and in display, and also in photomicrography. The emphasis in this course shall be on practical assignments. One course. *Mitchell and staff*

**PTH 164. Clinical Diagnostic Methods.** The course is designed to instruct the student in technical and clinical laboratory procedures which are utilized in the diagnosis of disease. Emphasis is placed upon selection and interpretation, rather than the performance of the various procedures. One course. Prerequisites: PTH 107, 110, 200. *Staff*

**PTH 165-166. Surgical Pathology.** During this two-semester course, students are instructed in gross pathology as it pertains to surgical specimens. Gross and



microscopic findings are correlated with clinical observations while the student learns the procedural handling of selected specimens. The program of study will consist of lectures, demonstrations, and laboratory work. Two courses. Prerequisites: PTH 107, 110, 200. *Vollmer and staff*

**PTH 167. Autopsy Practicum.** The course is designed as a practical rotation on the autopsy service, the student participating in necropsy dissections with the resident staff. Emphasis is placed on student participation in both the technical and academic aspects of the autopsy. Also required are attendance and participation in all departmental conferences concerning gross autopsy pathology. One and one-half courses. Prerequisites: PTH 107, 160, 200. *Adams and Lewis*

**PTH 183. Special Autopsy Techniques and Procedures.** The course is designed to teach the special technical skills used in modified necropsy procedures (i.e., en bloc cervical spine removal, postmortem coronary arteriography, en bloc pituitary-sella turcica). Emphasis is placed on the student becoming proficient at techniques which demonstrate or preserve various aspects of gross pathology. The program of study will include seminars, demonstrations, and preparation of museum teaching specimens. One course. Prerequisites: PTH 107, 160, 200. *Broda and Phipps*

**PTH 196. Student Autopsy Seminar.** Students share interesting autopsy and surgical pathology cases encountered in their practical rotations by making lecture-slide presentations to their peers. Emphasis is placed on learning through literature research and experience is provided in giving oral presentations. One-half course. Prerequisites: PTH 165, 167. *Broda and Phipps*

**PTH 200. Pathology.** Fundamentals of pathology are presented by correlating gross and microscopic material to illustrate the structural changes in disease. Lectures consisting of broad concepts of disease processes are presented by senior faculty and conferences with small groups of students are held under the guidance of staff members. Etiology and pathogenesis of disease as well as the experimental approach are emphasized for the purpose of correlation with clinical disease. In addition to group work, conferences are scheduled to discuss problems derived from autopsies. Students are required to collaborate in postmortem studies and present cases in clinical-pathologic conferences under the direction of the staff. Two courses. Prerequisites: PTH 101, 102, 107. *Staff*

## Elective Courses

Qualified senior students, in the Pathologist's Assistant Program, who have successfully completed PTH 107 and PTH 200 may choose elective classes in specialized areas of pathology with the approval of the faculty member responsible for the course. In addition, selected courses from the Medical Technology Program may be elected subject to faculty approval.

## PEDIATRICS

**PED 150. Community Pediatrics.** The major objective of this rotation is to provide students with an overview of community pediatric practice. Students will gain familiarity with normal growth and development and developmental evaluation, pediatric preventive medicine, and evaluation and management of common childhood illnesses. Special emphasis is placed on communication skills and relating sensitively to both children and parents. Each student will spend time in the newborn nursery and be involved with hospitalized patients. One or two courses. *Rourk and staff*

**PED 152. Intensive Care.** A four-week rotation that acquaints the student with the acute and intensive care required for patients who have undergone major and complex surgical procedures, suffered massive and severe trauma involving multiple organ systems, or experienced sudden cardiorespiratory collapse or other life-threatening medical crises. Emphasis is placed on ventilatory assistance, cardiopulmonary resuscitation, fluid and electrolyte replacement, and acid-base balance under resident physician supervision. Prerequisite: PED 150. One course. *Staff*

**PED 153. Pediatric Chest and Allergy.** During this four- or eight-week rotation the student is taught to obtain a complete history and physical examination with emphasis on the allergy data base and the structure of the family. Students gain understanding of the impact of chronic illness on children and their families. They gain an understanding of home care programs and are able to alter them to fit a family's ability and resources. The student carries out appropriate diagnostic procedures and assesses the results for children with pulmonary disease. One or two courses. *Staff*

**PED 154. Full-Term Nursery.** During this four- or eight-week rotation the student learns to collect the maternal history accurately and completely; to recognize those maternal conditions imposing risks on the full-term infant; to collect samples for newborn screening laboratory exams; to examine a full-term infant and distinguish those who are abnormal from those who are normal; and to give cogent instructions to mothers and fathers regarding home care of the infant. One or two courses. *Staff*

**PED 191. Independent Study.** This rotation allows students with a particular interest in an area of pediatrics to construct their own need-specific learning experience. PED 191 is arranged with the program staff and appropriate clinical faculty. One or two courses. *Staff*

## PHYSIOLOGY

**PHS 102. Basic Human Physiology.** A lecture course in which the functions of major organ and tissue systems and their contributions to total body homeostasis in health and disease are discussed. The interpretation of laboratory findings in view of known physiological parameters and the communication, using appropriate terminology, of these findings to physicians and other health care professionals as well as to the patient's family is stressed. One course. *McHale and staff*

## RADIOLOGY

**RAD 101. Introductory Radiology and Electrocardiography.** A review of roentgen anatomy and an introduction to the uses of radiology in the care of patients. Students learn the basic clinical concepts and develop skills in performing basic scanning and routine radiographs. Basic principles of electrocardiography are presented. Students are taught to recognize normal and common abnormal patterns. One-half course. *Thompson and staff*

## SURGERY

**SUR 101. Basic Surgical Principles.** An introduction to basic surgical principles and the fundamentals of aseptic technique needed in the preparation of the operative site and draping of the sterile field. Students learn the basic principles of preoperative and postoperative management. One-half course. *Kenan, Domizio, and staff*

**SUR 150. General Surgery.** An eight-week rotation that exposes the student to a great variety of clinical problems, crossing, at times, many so-called specialty lines. Emphasis on the gastrointestinal tract, general trauma, endocrine tumors, peripheral vascular reconstructions, congenital and pediatric surgical problems are included in this rotation. Basic surgical principles, as well as insights into many of the surgical specialties, can be learned on this service. Preoperative diagnostic principles and postoperative management are emphasized. The most attractive feature of the rotation is the great diversity of surgical problems encountered. Two courses. *Staff*

**SUR 151. Surgical Clerkship.** During this eight-week required rotation students learn fundamental skills in the evaluation and management of surgical problems. Time is equally split between the emergency and outpatient services at Duke Hospital and the inpatient surgical service at Durham County General Hospital. Students participate in minor surgical procedures, including wound debridement and closure. They assist with the stabilization and management of surgical emergencies. On inpatient surgery, students perform preoperative examinations, attend operative procedures and monitor postoperative care. Two courses. *Division of General and Thoracic Surgery and Staff*

**SUR 152. Intensive Care.** During this experience the student learns to: recognize patients requiring intensive medical care; operate and maintain life-monitoring equipment; understand and evaluate fluid electrolyte replacement and acid-base balance; and administer cardiopulmonary resuscitation and ventilatory assistance. This experience may be gained on the respiratory care unit, medical care unit, intensive care nursery, surgical acute care unit, and in pulmonary function-inhalation therapy. One course. *Staff*

**SUR 153. Cardiothoracic Surgery.** During this rotation, the student learns to perform a detailed history and physical examination with special emphasis on the cardiothoracic system. With special help from the resident and senior staff and through reading, the student should be able to appreciate special diagnostic procedures such as angiograms, pulmonary function studies, etc. In the operating room, the student will assist and follow the conduct of various open-heart and other major thoracic procedures. The resident, senior staff, and student will participate in the management of complex problems such as various arrhythmias, shock, fluid and electrolyte imbalance. One course. *Cardiothoracic Surgery Staff*

**SUR 155. Surgical Acute Care Unit.** During this rotation the student is acquainted with the postoperative care of patients who have undergone surgical procedures or suffered massive and severe trauma involving multiple organ systems. Special emphasis is centered on ventilatory assistance problems, open-heart cases, neurosurgical problems, and massive trauma cases. The variety of the patients and the diversity of the problems that exist on the unit give the student a broad insight into surgical postoperative management. The student should strive for an understanding of the pathophysiology and physiology. One course. *Cardiothoracic Division Staff*

**SUR 156. Otolaryngology.** During this rotation students will learn to evaluate problems related to the ear, nose, and throat. Experience will include both ambulatory and hospitalized patients. Students will gain familiarity with various diagnostic and therapeutic procedures and will have an opportunity to follow patients over a period of time. One or two courses. *Division of Otolaryngology and Staff*

**SUR 157. Plastic Surgery.** During this course students gain familiarity with patients requiring plastic repair including burn patients, and patients with facial anomalies and maxillofacial neoplasms. The course objectives include an



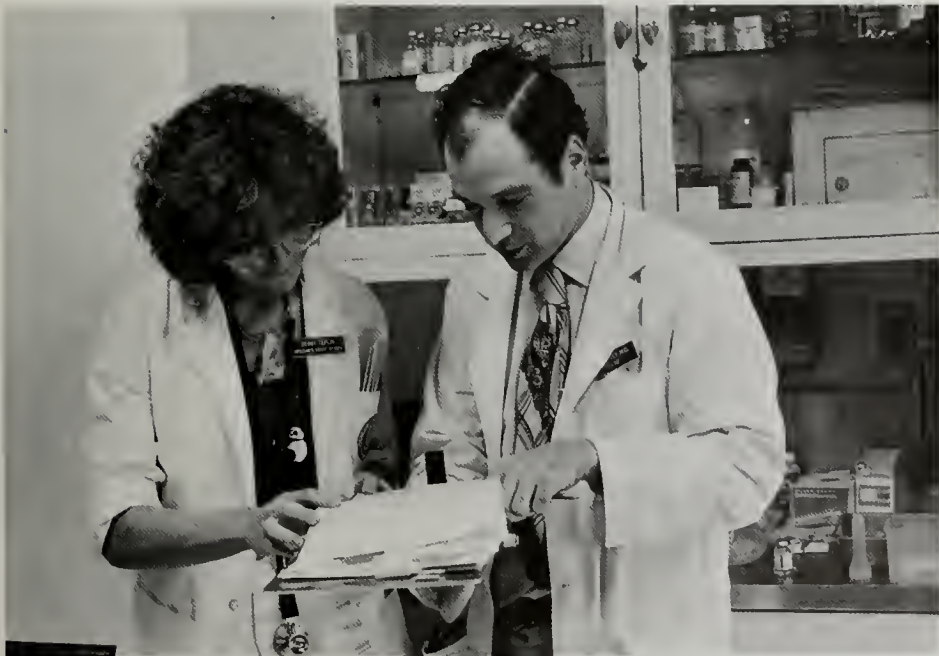
understanding of preoperative and postoperative care, recording the initial history and physical examination, and ordering indicated laboratory tests and studies. It is hoped that the student will learn to respond sensitively to the emotional needs of this group of patients. One or two courses. *Division of Plastic Surgery and Staff*

**SUR 160. Urology.** During this rotation, students learn about urologic disease. Students participate in the care of clinic and hospitalized patients with common urologic problems and take part in initial evaluations, diagnostic procedures, surgery, and acute and long-term follow-up care. One or two courses. *Division of Urology*

**SUR 161. Neurosurgery.** During this eight-week rotation the student is provided with a working understanding of the problems unique in the diagnosis, treatment, and management of the neurosurgical patient. The student may gain experience in the operating room by assisting with the patient, with instrumentation, and with the operative procedures. A working knowledge is gained of diagnostic techniques such as carotid arteriograms, electroencephalograms, ventriculograms, spinal taps, etc. Experience and knowledge in emergency room techniques and management of acute neurosurgical injuries (GSW, blunt head trauma, acute quadriplegia, hemiplegia, etc.) is included. Two courses. *Division of Neurosurgery*

**SUR 162. Orthopaedic Surgery.** Students gain familiarity with the evaluation and management of common orthopaedic problems at the primary care level, including soft tissue injuries, fractures, arthritis, and low back pain. Students will learn the mechanism for applying different types of traction, how to apply splints and casts, and how to provide emergency care for acute trauma. One or two courses. *Orthopaedic Division*

**SUR 191. Independent Study.** This rotation allows students with a particular interest in an area of surgery to construct their own need-specific learning experience. SUR 191 is arranged with the program staff and appropriate clinical faculty. One or two courses. *Surgical Staff*





# Graduate Degree Programs



The Graduate School of Duke University awards a Master of Health Administration degree to students who complete the program in health administration and a Master of Science degree to students who complete the program in physical therapy. Both health administration and physical therapy are departments in the Graduate School and additional information, including courses of instruction, may be found in the Graduate School bulletin which is available through the Office of Admissions, Graduate School, Duke University, Durham, North Carolina 27706. Graduate programs are also integral parts of Duke University Medical Center.

## Health Administration

Professors: Montague Brown, D.P.H.; B. Jon Jaeger, Ph.D.; David G. Warren, J.D.

Associate Professors: Barbara P. McCool, Ph.D.; Wilma A. Minnier, M.S.; Louis E. Swanson, A.B.

Assistant Professors: Thomas J. Delaney, M.S.; David J. Falcone, Ph.D.; Donald S. Smith, M.H.A.,

*Director of Graduate Studies*; D. Michael Warner, Ph.D.

Associate: Robert G. Winfree, M.H.A.

Research Associate: David L. Cusic, M.P.H.

Adjunct Professor: Arnold D. Kaluzny, Ph.D.

Adjunct Associate Professors: Elizabeth J. Coulter, Ph.D.; Richard H. Peck, M.H.A., David P. Hunter, M.P.H.

Adjunct Assistant Professor: Jeff H. Steinert

Lecturer: Robert J. Sullivan, Jr., M.D.

The profession of health administration emerged early in this century in response to the increasing demand for health services. Over the years several specific areas of health administration have been identified, most notably, public health administration, hospital administration, medical care organization, and comprehensive health planning. All of these require a common set of managerial skills and a broad knowledge of the health system and its environment. It has been estimated that the system requires approximately 50,000 individuals in positions involving health administration. In recognition of the complexity and importance of hospitals, Duke University established the first graduate program in the nation for the training of hospital administrators in 1930. For further information write to the Graduate School (Health Administration), 127 Allen Building, Duke University, Durham, North Carolina 27706.

**Financial Aid.** A limited number of scholarships are available. All aid is on the basis of demonstrated financial need as described in the section on Student Aid.

# Physical Therapy

Professor: Robert C. Bartlett, M.A., *Chairman*

Associate Professors: Eleanor F. Branch, Ph.D., *Director of Graduate Studies*; Elia E. Villanueva, M.A.

Assistant Professor: Grace C. Horton, B.S.

Assistant Clinical Professors: Elaine M. Eckel, M.A.; Mary Ellen Riordan, M.S.

Associates: Marjory Cannon, M.M.S.; Mary M. Huse, Ph.D.

Clinical Associate: Carl J. Smith, B.S.

Adjunct Assistant Professor: Marcia Roses, M.A.

Adjunct Associates: Barbara A. Duffer, M.A.; Janet Gwyer, M.A.C.T.; Lois Ann Hodges, M.A.;

Rae M. Litaker, B.S.; Terry R. Malone, M.S.; Martha Propst, M.A.; Kathleen R. Riley, B.S.;

Charline Rotha, M.A.; Wadsworth D. Roy III, B.S.; Virginia Williams, M.A.; Judy A. White, B.S.

The Duke University Graduate Program in Physical Therapy, leading to the Master of Science degree, is a program for entry into the profession of physical therapy. The program is designed to provide a comprehensive foundation in the art and science of physical therapy, preparing individuals for clinical practice. Experiences in the areas of administration and research are also provided. Students may arrange their curricula to allow for the development of teaching skills.

**Program of Study.** The fully accredited program of study requires fifty-two credit units of graduate course work, research, clinical affiliation, or other equivalent academic experience, and is twenty-two consecutive months in length. Forty-one units of work must be in physical therapy, five units in designated courses in anatomy and the remaining six units in electives in related fields. A research project is required which provides the opportunity to pursue a particular aspect of physical therapy in depth.

**Curriculum.** Students must complete the following:

## First Year

<i>Fall semester</i>		<i>Credit units</i>
PT 217	Physical Therapy Dynamics I	3
PT 230	Physical Evaluation and Instrumentation	2
PT 301	Introduction to Scientific Inquiry	3
PT 234	Introductory Pathology	2
ANA 305	Gross Anatomy	3
ANA 309	Neuroanatomy	2
<i>Spring semester</i>		
PT 218	Physical Therapy Dynamics II	5
PT 231	Physical Evaluation and Instrumentation	5
PT 236	Medical Sciences	4
PT 242	Directed Clinical Experience in Physical Therapy	2
<i>Summer terms</i>		
PT 240	Prosthetics and Orthotics	2
PT 243	Directed Clinical Experience in Physical Therapy	2

## Second Year

<i>Fall semester</i>		<i>Credit units</i>
PT 220	Physical Therapy Dynamics III	3
PT 297	Special Topics in Physical Therapy	3
PT 332	Administration of Physical Therapy Services	6
	Electives	
<i>Spring semester</i>		
PT 244	Directed Clinical Experience in Physical Therapy	3

Detailed course descriptions may be found in the *Bulletin of Duke University Graduate School*.

**Prerequisites for Admission.** Requirements for admission are a baccalaureate degree and completion of prerequisite courses, although provisional acceptance can be approved if the major portion of the prerequisites have been completed at the time of application; final approval will depend upon satisfactory completion of the prerequisites before enrollment. A total of eight courses or the equivalent of thirty semester hours is required in the field of natural science including two to four courses in the biological sciences, with a course in physiology of human systems required; two to four courses in chemistry; and at least one course in physics which includes principles of heat, light, electricity, and mechanics. All natural science courses should include both lecture and laboratory. A total of five courses is required in the fields of social science and humanities, of which two must be in psychology. In addition, a course in introductory statistics is required. Calculus is recommended but not required.

**Application Procedures.** Applications include the following:

1. A completed Graduate School application form, including a nonrefundable fee of \$25, which must be submitted by 1 February of the year for which admission is requested.
2. The following supportive documents, which must be received by 1 March:
  - a. two official transcripts from each institution of higher learning attended;
  - b. results from the Graduate Record Examination Aptitude Test; and
  - c. three letters of recommendation, two of which should be from individuals in academic fields of study, such as the natural and/or social sciences; it is desirable that the third recommendation be from a physical therapist or a related health professional.

Requests for applications and further information should be directed to the Director of Graduate Studies, Department of Physical Therapy, Box 3965, Duke University Medical Center, Durham, North Carolina 27710.

**Tuition and Expenses.** The 1978-79 academic year tuition for students enrolled in the Graduate Program in Physical Therapy is approximately \$137 per credit unit. Estimated cost for the two-year program is approximately \$16,500, including tuition and living expenses.

**Financial Aid.** All students are encouraged individually to seek sources of financial assistance. Loan money is available through the Duke University School of Medicine. Financial aid applications are mailed to students after acceptance into the program. Please refer to the section on Student Aid.





# Certificate Programs



Duke University Medical Center has responded to the increased need for qualified individuals at all levels in the health care system by developing educational programs designed to equip people for a variety of positions. These programs, which vary in admission requirements and length of training, offer students both clinical and didactic experience. Graduates of these programs are awarded certificates.

## Clinical Psychology Internship

The Division of Medical Psychology, Department of Psychiatry, Duke University Medical Center, offers internship training in clinical psychology to predoctoral clinical psychology students. The program, approved by the American Psychological Association, provides experience in many contexts with a wide diversity of patients. Internship training provides experience in the traditional activities of clinical psychologists: assessment, consultation, psychotherapy, and research. Those successfully completing the requirements for internship will be awarded a Duke University Medical Center certificate. Requests for additional information and correspondence concerning admission to the program should be directed to the Director, Clinical Psychology Internship Program, Box 3895, Duke University Medical Center, Durham, North Carolina 27710.

## Cytotechnology

Professor: William W. Johnston, M.D., *Director, Cytotechnology Program*

Associate Professor: Edward H. Bossen, M.D., *Associate Director*

Assistant Professor: Sandra H. Pressig, M.D.

Associate: Patricia R. Ashton, A.B., CT(ASCP), *Educational Coordinator*

Teaching Staff: Rosiland M. Wallace, A.B., CT(ASCP), *Teaching Supervisor*

Progress in the early detection of cancer by the microscopic examination of smears of cell samplings, especially from the female genital tract, has resulted in the specialty of cytotechnology. The cytotechnologist deals with the technical and diagnostic aspects of exfoliative cytology. Graduates of the program are awarded a certificate and are eligible to take the certifying examination given by the Board of Registry of the American Society of Clinical Pathologists.

**Program of Study.** The twelve-month program beginning in early September consists of two parts: the first half is primarily devoted to theoretical and practical exercises in the techniques of exfoliative cytology and interpretation of the clinical

material; the last half is composed of laboratory training in all aspects of exfoliative cytology.

**Prerequisites for Admission.** All applicants shall have completed two years (sixty semester hours or ninety quarter hours) of academic education in an accredited college or university before being accepted into this school. This preparatory work must include a minimum of fourteen semester hours or twenty-one quarter hours of biology. These may include courses in general biology, bacteriology, parasitology, physiology, anatomy, histology, embryology, zoology, and genetics. An applicant presenting a baccalaureate degree from an accredited college or university must have completed the biology requirements before admission. Biology credits earned more than seven years prior to application must be updated by taking three additional semester credits related to cell biology within a period of time not to exceed twelve months prior to admission. Priority will be given to individuals with a Bachelor of Science or Bachelor of Arts degree or to ASCP registered medical technologists.

**Application Procedures.** Applications must be submitted by 1 April of the year for which admission is requested and must contain the following:

1. a completed application form including a \$25 nonrefundable fee;
2. official transcripts from all colleges or professional schools attended;
3. one copy of all transcripts must be submitted by the applicant to the National Accrediting Agency for Clinical Laboratory Sciences for approval;
4. two letters of recommendation from individuals acquainted with the applicant's educational or professional experience; and
5. a personal interview prior to final acceptance.

All applicants will be notified by 1 May regarding admission to the program. Requests for further information and application forms should be directed to the Director, Cytotechnology Program, Department of Pathology, Duke University Medical Center, Durham, North Carolina 27710.

**Laboratory Fees.** On notification of acceptance, students are required to pay a nonrefundable registration fee of \$25. This fee will be applied towards the year's course fee of \$1,050.

**Financial Aid.** See the section on Student Aid.

## Electrophysiological Technology

Medical Director: W.P. Wilson, M.D.

Program Director: Pamela P. Pepper, B.A.

Associate Program Director: Linda C. Ollis, R. EEG T.

Instructional Staff: C.W. Erwin, M.D., *Associate Professor*; M.R. Volow, M.D., *Associate in Psychiatry*; Richard Weiner, M.D., *Medical Research Associate*; P. Hope, R. EEG T. Ann Lininger, R. EEG T.; Linda Quinlivan, R. EEG T.; Victor Hope, R. EEG T.; and James Martindale, B.S.

In 1961, Duke University Medical Center began its formal program in electrophysiological technology (EPT) as an expansion of the inservice training program begun in 1955 at the Durham V.A. Medical Center. Every year the laboratories in the Medical Centers perform over 8,000 examinations including investigative procedures during brain surgery. Ten students are accepted into the program which begins in July. Upon successful completion of this twelve-month program, graduates are awarded a certificate and become eligible to take the certifying examination given by the American Board of Registration of Electroencephalographic Technologists.

**Program of Study.** The first six months of this program are designed to instruct the student in basic neurosciences and electronics as well as in the use of electrophysiological recording equipment. The second six months consists of advanced instruction in instrumentation, electrophysiological recordings techniques, and clinical medicine.

**Prerequisites for Admission.** To qualify for acceptance to this program, an applicant must be a high school graduate. Students with two or more years of college will be given preference. Others will be accepted on the basis of their merit. Applicants should have a strong science background and satisfactory scores on the Scholastic Aptitude Test (SAT).

**Application Procedures.** Applications must be submitted by 1 April of the year for which admission is requested and must contain the following:

1. a completed application form and nonrefundable application fee;
2. official high school and college transcripts;
3. Scholastic Aptitude Test (SAT) scores from the College Entrance Examination Board (CEEB);
4. three letters of recommendation, one from an individual acquainted with the applicant's character and the others from those acquainted with the applicant's education or professional experience;

A personal interview is usually required. Applicants will be contacted by the program director to confirm an interview date after all application materials have been received and reviewed. All applicants will be notified as soon as possible, usually by 15 May regarding admission to the program. Requests for further information and application forms should be directed to the Director, Electrophysiological Technology Program, V.A. Medical Center, 508 Fulton Street, Durham, North Carolina 27705.

**Registration Fees and Expenses.** A course fee of \$650 is required of all students enrolled in the program. This fee does not include books and teaching materials. Uniforms are not furnished. An additional nonrefundable fee of \$25 for processing the application, payable to Duke University Medical Center, must accompany the application.

**Courses of Instruction.** Students must complete the following courses:

<i>Summer and Fall Semester</i>		<i>Equivalent Semester Hours</i>
EPT 101	EEG Technology	3
EPT 103	The Biological Basis of Electrophysiological Technology	4
EPT 105	Basic Electricity and Electronics	3
EPT 107	Clinical Science	3
EPT 109	Clinical Practicum	6
<i>Winter and Spring Semester</i>		
EPT 102	EEG Technology	3
EPT 104	The Biological Basis of Electrophysiological Technology	4
EPT 106	Instrumentation	3
EPT 108	Clinical Science	3
EPT 110	Clinical Practicum	6
		<hr/>
Total		38

No academic credit is given by Duke University for these courses, however, there are a number of institutions who do give academic credit for completion of these courses.

The practicum will consist of supervised instruction and practical experience in the EEG Laboratories at Duke, the V.A. Medical Center and the V.A. Epilepsy Research Center. This will comprise about 1,200 hours of supervised practice.



**Financial Aid.** All students are encouraged to seek individual sources of financial assistance. Please refer to the section on Student Aid.

## Health Administrators Management Improvement Program

Professors: Montague Brown, D.P.H.; B. Jon Jaeger, Ph.D.; David Warren, J.D.

Associate Professors: Barbara P. McCool, Ph.D.; Louis E. Swanson, A.B.

Assistant Professors: Thomas J. Delaney, M.S.; David J. Falcone, Ph.D.; Wilma A. Minnier, M.S.;

Donald S. Smith, M.H.A., *Director of Graduate Studies*; D. Michael Warner, Ph.D.

Associate: Robert G. Winfree, M.H.A.

Research Associate: David L. Cusic, M.P.H.

Adjunct Professor: Arnold D. Kaluzny, Ph.D.

Adjunct Associate Professors: Elizabeth J. Coulter, Ph.D.; and Richard H. Peck, M.H.A., Dean P. Hunter, M.P.H.

Adjunct Assistant Professor: Jeff H. Steinert

Lecturer: Robert J. Sullivan Jr., M.D.

The Health Administrator's Management Improvement Program (HAMIP) is conducted by the Department of Health Administration at Duke University specifically to strengthen the management skills of practicing health administrators who have not completed formal university-based education in health administration. It is designed to allow the working administrator to acquire skills and knowledge for more effective management of hospitals or other health organizations with a minimum of time away from the job. A certificate is awarded for successful completion of the program.

**Program of Study.** All classroom sessions in this one-year program are held on the Duke University campus. The program consists of an initial one-week session, two-day sessions each month for eleven consecutive months, and a concluding one-week session, or a total of thirty-two full days on campus over a thirteen-month period. The HAMIP curriculum includes a structured home study program as well as lectures, seminars, and classroom work sessions while at the University. For each session there are assignments to be completed at home prior to



class as well as follow-up work on the topics which have been discussed during the class session.

**Prerequisites for Admission.** All applicants must currently be employed in health organizations. Administrators, assistant administrators, and candidates for such positions in health organizations will be eligible to attend. No one holding a master's degree in hospital administration will be eligible for admission. Formal academic preparation is not a prerequisite. Priority is given to applicants from North and South Carolina; however, applicants from other states may be accepted. Students will be selected on the basis of two criteria: how much they can benefit from the program, and how much the student's participation in the program will help the organization which employs the student.

**Admission Procedures.** For further information write the Coordinator, Health Administrator's Management Improvement Program, Box 3018, Duke University, Durham, North Carolina 27710.

**Financial Aid.** Scholarship assistance may be available to students.

## Hospital and Clinical Pharmacy Residency

Director: Milton W. Skolaut, B.S.

Associate Director of Pharmacy Services: James C. McAllister, M.S.

Associate: William H. Briner, B.S., *Director of Radiopharmacy Laboratory*

**Residency Program.** The Hospital and Clinical Pharmacy Residency is a twelve-month postbaccalaureate program conducted by the Department of Pharmacy at the Duke University Medical Center. The residency is designed to give the graduate pharmacist extensive training in clinical pharmacy practice and basic hospital pharmacy services including unit-dose drug distribution, IV admixture, and hyperalimentation systems.

**Admission Standards.** A resident must be a graduate of a pharmacy school and hold a B.S., M.S., or Pharm.D. degree. The resident must have demonstrated good academic and leadership capabilities. It is preferable that the applicant have previous hospital pharmacy experience.

**Application Procedures.** Applications must be submitted by 15 January of the year for which admission is requested and include the following:

1. ASHP placement service registration by the preceding 1 December;
2. personal interview, to be arranged by appointment;
3. official transcript from pharmacy school and other professional programs attended;
4. completed Duke University Medical Center employment and Allied Health Division application forms; and
5. letters of recommendation from at least three persons having known the applicant in a professional way (i.e., clinical pharmacist, professor, hospital pharmacist).

Applicants will be notified by 30 March regarding admission to the program.

**Stipend.** A stipend of \$11,000 is granted for the twelve-month residency.

## Nuclear Medicine Technology

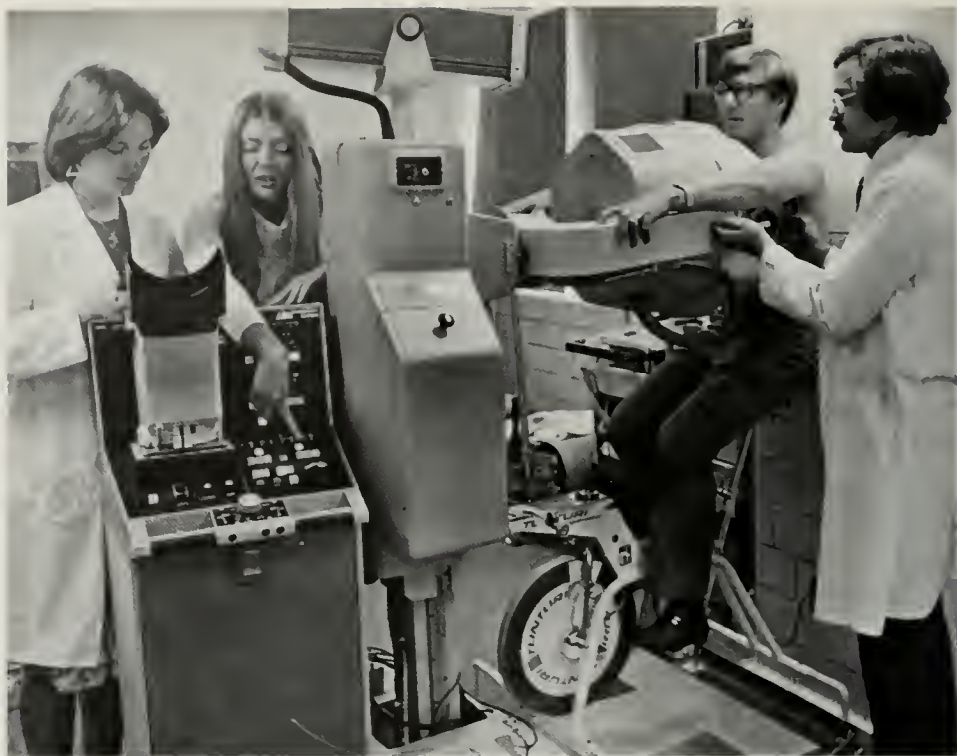
Associate Professor and Medical Director: Joseph B. Workman, M.D.

Associate and Educational Director: Elizabeth C. Blackburn, M.Ed., NMT(ARRT)

Associate Professors: C. Craig Harris, M.S.; R. H. Wilkinson, Jr., M.D.

Assistant Professors: W. H. Briner, B.S. Pharm.; D. C. Sullivan, M.D.

Associate: Conrad Knight, B.S.



Technical Supervisor: E. D. Flowers, R.T., NMT(ARRT, ASCP)

Clinical Coordinator: Sharon M. Hamblen, R.T., NMT(ARRT)

Instructors: L. H. Lunn, MT(ASCP)S.C.; C. L. Wells, MT(ASCP), M.Ed.; Neil Petry, R.Ph., M.S.

Additional instruction is provided by the nuclear medicine technical staff of the Duke and V.A. Medical Centers.

In the fall of 1967 the Division of Nuclear Medicine in the Department of Radiology of the Duke Medical Center began a full year program in nuclear medicine technology. This program is approved by the American Medical Association, and upon completion of studies the student is awarded a certificate and becomes eligible to take the ARRT, ASCP, and NMTCB registry examinations in nuclear medicine technology.

**Program of Study.** The program consists of twelve months of instruction and clinical training. The first three months are spent in courses involving both didactic and laboratory instruction. The following nine months are spent in an internship. The student rotates through clinical areas in the Duke University and the Durham V.A. Medical Centers.

**Prerequisites for Admission.** Applicants must be registered or registry-eligible radiologic technologists, medical technologists, or have an Associate of Arts/Science or Bachelor of Arts/Science degree from an accredited college. Due to the pace and scope of the subject matter presented, it is strongly recommended that students review the following areas prior to entry into the program: mathematics (arithmetic and algebra), general biology, chemistry, and physics.

**Application Procedures.** Applications must be submitted by 1 March of the year for which admission is requested and must contain the following:

1. two completed application forms including a \$25 nonrefundable application fee, and recent photographs;



2. official transcripts from all high schools, colleges, or professional schools attended;
3. results from any standardized aptitude tests, such as PSAT, SAT, and ACT taken by the applicant;
4. three letters of recommendation from business or professional men and women, not related to the applicant, but who are acquainted with the applicant's educational or professional experiences; and
5. a personal interview is desirable, but not required.

All applicants will be notified by 1 April regarding admission to the program. Requests for further information and application forms should be directed to the Program Director for Nuclear Medicine Technology, Allied Health Education Building, Veterans Administration Medical Center, Durham, North Carolina 27705.

**Registration Fees and Expenses.** The course fee for this program is \$550. Accepted candidates must pay a nonrefundable deposit of \$100 to hold their place in the class. The balance of \$450 is due and payable at matriculation. Students enrolled in this program do not pay full Duke tuition. Students must furnish their own uniforms; however, laboratory coats are provided by the program. In addition, books and supplies cost approximately \$80.

**Financial Aid.** After successfully completing the first three months of course work, all students will be paid a modest monthly stipend from Duke University Hospital for the remaining nine months of the program. Please refer to the section describing Student Aid.

**Courses of Instruction.** Students must complete the following courses:

<i>Title</i>	<i>Hours</i>
Administrative/Education Techniques	35
Anatomy/Physiology/Pathology	70
Chemistry and Radiopharmacy	60
Clinical Techniques	80
Instrumentation/Computer Techniques	100
Math Review	30
Nuclear and Radiation Physics	80
Orientation	15
Radiation Biology	15
Radiation Protection	15
Total	500

In addition, assigned experience in clinical procedures will total 1,440 hours.

## Pastoral Care and Counseling

Assistant Professor: John C. Detwiler, B.D., Th.M., *Director of Clinical Pastoral Education Programs*

Assistant Professor: P. Wesley Aitken, B.D., Th.M.

Professor: Richard A. Goodling, B.D., Ph.D.

Instructor: Peter G. Keese, S.T.B., Th.M.

Assistant Professor: Paul A. Mickey, B.D., Ph.D.

A graduate program in pastoral care and counseling is available to clergy and sympathetic laity of all religious groups. There are four program options: a single unit of clinical pastoral education, an internship, a residency, and a fellowship. All are designed to train ordained individuals who desire to specialize in pastoral care and counseling, enhance their skills as parish clergy, or to broaden their understanding. Those who enroll in the program will be required to serve as chaplains or as pastoral counselors in the Medical Center or in the community of Durham. All





program options are approved by the Association for Clinical Pastoral Education, Inc.

**Programs of Study.** The following programs in basic, advanced, and supervisory clinical pastoral education are offered at the Duke University Medical Center: *Single Unit of Basic CPE*—The single unit is offered during the summer months, beginning in June and lasting ten to twelve weeks (dates to be specified). It is also offered concurrently with the fall and spring semesters of Duke Divinity School. Admission to the single unit of basic CPE is based on the following:

1. submission of written application materials;
2. admission interview by a qualified examiner;
3. acceptance by the center.

*Clinical Internship (Basic CPE)\**—The internship usually begins in June and lasts for twelve months (dates to be specified). This program grants four units of CPE credit with the ACPE. Admission is based on the following:

1. graduation from college—equivalencies may be considered;
2. evidence of serious religious and theological interest;
3. completion and supervisor's evaluation of one certified unit of CPE (basic unit) in an accredited center usually strengthens the application;
4. submission of written application materials;
5. a personal interview with the supervisory and teaching staff;
6. acceptance by the center.

*Clinical Residency (Advanced CPE)\**—The residency usually begins in September and lasts twelve months. The specialization of the advanced year may be in a number of clinical settings including pastoral counseling and hospital chaplaincy. Four units of CPE credit are granted with the ACPE. Admission is based on the following:

1. evidence of successful completion of the program objectives of basic CPE, or its equivalent. Usually this means a minimum of two quarters of basic CPE;
2. submission of written application materials;
3. a personal interview with the supervisory and teaching staff;

4. acceptance by the center.

*A Fellowship in Supervisory CPE\**—Supervisory CPE provides a learning opportunity for the qualified person, with demonstrated personal, professional, and clinical competence who desires to become a certified supervisor of CPE. Admission to this program is based on his/her potential to assist others in the clinical methods of learning, together with a capacity to acquire techniques and theories of supervision. Admission to supervisory CPE is based on:

1. ecclesiastical endorsement;
2. a period of time which allows the candidate to demonstrate his/her ability to function pastorally, usually not less than three years;
3. completion of program objectives of basic and advanced CPE, usually at least four units of CPE;
4. consultation by the appropriate committee in the region with respect to his/her readiness to pursue supervisory training;
5. submission of written application materials;
6. a personal interview with the supervisory and teaching staff;
7. acceptance by the center.

Requests for application and further information about any of the programs should be directed to the Director, Pastoral Care and Counseling Programs, Box 3112, Duke University Medical Center, Durham, North Carolina 27710.

**Registration Fees and Expenses.** A fee is usually charged for the screening (admission) interview. In our region of the ACPE, Mid-Atlantic, the fee is \$25. The fee varies from place to place throughout the nation. All students who take clinical pastoral education at Duke Medical Center must be accepted and enrolled through either the Division of Allied Health or Duke Divinity School.

Students who wish to receive academic credit shown on a transcript should apply for admission to Duke Divinity School as a degree candidate (M. Div. or TH.M.) or as a special student. They will then enroll for CPE through PP 277 or PP 281, whichever applies. Clinical pastoral education fees are paid to the Divinity School, as are other courses. For 1979–80, the fee is \$537.50 per semester for CPE at the Divinity School. (CPE is two course credits for a semester, which is \$268.75 a course credit.) Residents in pastoral counseling are required to be enrolled through the Divinity School.

All other students must be enrolled through the Division of Allied Health, Duke Medical Center, whether for single units or year-long programs. For 1979–80 fees are \$200 per unit.

**Financial Aid.** A limited number of training stipends are available—\$3,625 for the internship and \$5,705 for the residency and \$6,360 for the fellowship. No stipends are available for the single unit of training.

## Physician's Associate

A limited number of students who are not eligible for admission to the Bachelor of Health Science degree, but who possess outstanding credentials in a health care field, are accepted into the certificate program. The two-year program, including tuition, is the same as that described previously. Students are issued a Duke University undergraduate identification card and are granted the same privileges as the physician's associate students in the Bachelor of Health Science degree program. Prerequisites for admission differ in that applicants not planning to receive the degree may not necessarily fulfill the lower division requirements for

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\*Students who are taking more than two courses (not including CPE) in the Divinity School for academic credit will receive only three certified units of CPE—one in the summer, one in the fall, and one in the spring. All others receive four units of certified CPE.

transfer students to Duke University. In all other respects the prerequisites are the same, including a college level course in both chemistry and biology.

## Radiologic Technology

Professor: Charles E. Putman, M.D., *Chairman, Department of Radiology*  
Associate Professor and Medical Director: Donald R. Kirks, M.D.  
Technical Director: Cynthia C. Easterling, B.S., R.T.  
Clinical Instructor: Cynthia A. Shuba, B.S., R.T.  
Clinical Coordinator: Marie W. Stone, R.T.

The Radiologic Technology Programs at the Duke University and the Veterans Administration Medical Centers offer beginning and postgraduate education.

### RADIOLOGIC TECHNOLOGY CERTIFICATE PROGRAM

A maximum of twelve students is admitted each July for the two-year radiologic technology certificate program. Each student receives both academic and clinical training in all aspects of the field. After successful completion of the program, the student is eligible to take the national board examination sponsored by the American Registry of Radiologic Technologists.

**Program of Study.** The course of study follows the approved syllabus of the American College of Radiology and the American Society of Radiologic Technologists. The number of hours devoted to most subjects generally exceeds the basic minimum requirements.

Class lectures are scheduled on a full-time basis for July and August of the entering year. During the succeeding months of the program, classes are held on Monday through Friday afternoons with the exception of the summer months. The remainder of the program involves a series of clinical rotations in all aspects of technological activity, under the supervision of clinical instructors, full-time registered radiologic technologists, senior staff radiologists, and resident radiologists. Periodic examinations are given to evaluate progress. Full-time attendance is mandatory in both classroom and practical work. Saturday and Sunday as well as week-night emergency call will be required on a rotational basis.

**Prerequisites for Admission.** All applicants must have a diploma from an accredited high school or its equivalent.

**Application Procedures.** The following are necessary to complete application procedures:

1. a completed application form, including a recent photograph and a nonrefundable fee of \$25;
2. official transcripts from all high schools, colleges, or professional schools attended;
3. Scholastic Aptitude Test scores from the College Entrance Examination Board;
4. three letters of recommendation from persons not related to the applicant; and
5. a personal interview is required.

Requests for further information and application forms should be directed to the Technical Director, Radiologic Technology Programs, Box 3108, Duke University Medical Center, Durham, North Carolina 27710.

**Expenses.** A course fee of \$550 per year is charged. In addition, books and supplies will cost approximately \$225.

**Financial Aid.** There are no stipends. However, part-time employment in ancillary areas may be available in the Department of Radiology of the Duke and



the Veterans Administration Medical Centers. A student should not expect to be employed during the first two months of the program and following that period should not be employed for more than twenty hours per week.

The program is approved for the enrollment of persons eligible for benefits under Title 38 USC(G.I. Bill). Please refer to the section on Student Aid.

## ADVANCED RADIOLOGIC TECHNOLOGY PROGRAM

A maximum of ten students is admitted each September.

**Program of Study.** The advanced radiologic technology program is a ten-month program designed to provide an opportunity for registered radiologic technologists to acquire an in-depth knowledge of their profession. Only highly qualified and experienced radiologic technologists are admitted to the program. The curriculum encompasses such things as special radiographic procedures; application and knowledge of x-ray equipment; testing and evaluation of medical x-ray film, film processing and quality control; applied nursing procedures; special radiographic procedures; and communication skills. The program is designed to provide an educational and economical career ladder for those who are interested in special procedures in radiologic technology and/or departmental supervisory positions.

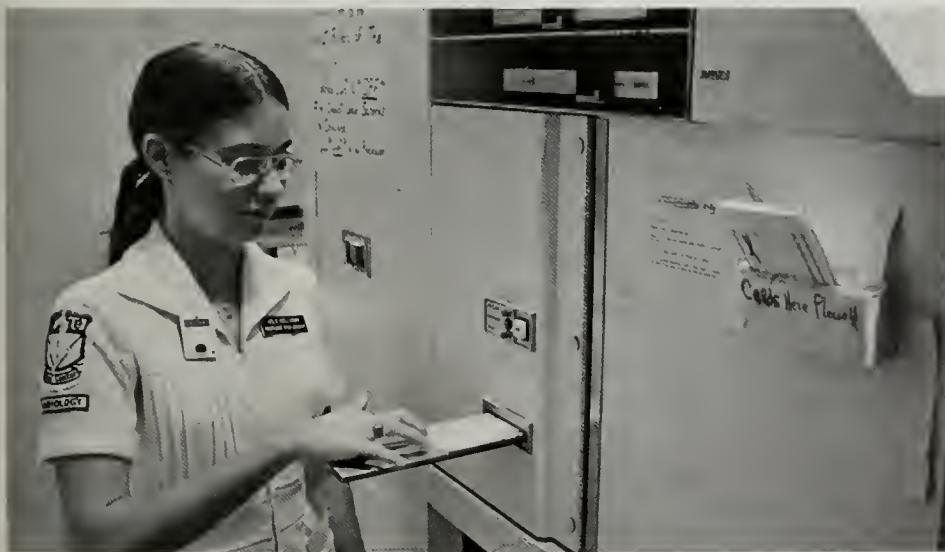
Classroom: 612 hours.

Clinical Clerkship: 840 hours.

**Prerequisites for Admission.** All applicants must be registered radiologic technologists.

**Application Procedures.** The following are necessary to complete application:

1. a completed application from, including a recent photograph and a nonrefundable fee of \$25;
2. official transcript from the radiologic technology program attended;
3. copy of certification as a registered radiologic technologist;
4. two letters of recommendation, one from applicant's previous supervisory radiologic technologist and one from a radiologist; and
5. a personal interview is required.





Requests for further information and application forms should be directed to the Technical Director, Radiologic Technology Programs, Box 3108, Duke University Medical Center, Durham, North Carolina 27710.

**Expenses.** A course fee of \$550 is charged. In addition, books and supplies will cost approximately \$100.

**Financial Aid.** A modest monthly stipend may be available depending on federal funding. In addition, part-time employment in the Department of Radiology of the Duke and the Veterans Administration Medical Centers is available for those students needing extra income. However, students should not plan to seek outside employment during the first three months of the program due to a heavy classroom commitment. Please refer to the section on Student Aid.

The program is approved for the enrollment of persons eligible for benefits under Title 38 USC(G.I. Bill).

## GREENSBORO COLLEGE AFFILIATION

An academic affiliation with Greensboro College, Greensboro, North Carolina, affords radiologic technology students the opportunity of additional education leading to a Bachelor of Science degree in biology. This applies to both the certificate and the advanced programs. By paying regular tuition to Greensboro College, the students will receive academic credit for studies pursued at Duke-V.A. When the clinical schedules permit, the students are allowed to commute to Greensboro to participate in studies on the Greensboro campus.

There are two methods of participating in the Duke-V.A.-Greensboro academic affiliation. Students wishing to complete studies leading to a B.S. degree may attend Greensboro first to complete general college and selected elective courses, after which they complete academic work at Duke-V.A. in the basic radiologic technology program. Upon graduation, students who successfully meet both Greensboro and Duke academic requirements will receive a B.S. degree from Greensboro College, and a certificate from the Duke University Medical Center-Veterans Administration Medical Center. Students wishing to attend Duke-V.A. first may do so and then complete degree requirements at Greensboro.

The second method of participating in this affiliation lends assistance to those who have already completed radiologic technology education and who wish an advanced education in radiologic technology, or further formal college courses to add to previous college work, or to begin college work.

Both options require completion of admissions applications to Greensboro College and Duke. Tuition will be paid to Greensboro College and both options lead toward completion of academic requirements for a B.S. degree. For those completing advanced work in radiologic technology, a certificate will be awarded.

Financial aid is available through student loans from Greensboro College.

Requests for further information and application forms should be directed to Dr. Arnold Van Pelt, Department of Biology, Greensboro College, Greensboro, North Carolina 27401.

## Speech Pathology—Audiology Residency

Professor: LuVern H. Kunze, Ph.D., *Director, Center for Speech and Hearing Disorders*

Associate Professor: Bruce A. Weber, Ph.D.

Assistant Professors: Jennifer Horner, Ph.D. and John Riski, Ph.D.

Associate: Burton B. King, M.S.

Clinical Staff: Judith Giles, M.C.S.; Jane Ann Struensee, M.A.; Grace A. Graper, M.S.; Janice Mack, M.Ed.; Susan McNair, M.Ed.; Karen R. Nailling, M.S.; and Barbara G. Saunders, M.A.



**Residency Program.** The Speech Pathology-Audiology Residency is a twelve-month postmasters program conducted by the Center for Speech and Hearing Disorders, Department of Surgery, Duke University Medical Center with cooperative participation of the Audiology and Speech Pathology Service, Veterans Administration Medical Center and the Developmental Evaluation Clinic, Department of Pediatrics, Duke University Medical Center. The residency is patterned after the residency programs in medicine and is designed to give the practicing speech pathologist advanced clinical training in three selected areas of specialization, including childhood language disorders, communicative disabilities secondary to neurogenic disorders and organic disorders of speech including cleft palate, craniofacial anomalies, laryngeal pathology, laryngectomy, and respiratory disorders. Audiologists may specialize in brainstem-evoked response audiometry or in audiology in medical settings. Competency in clinical practice and concomitant theoretical study are emphasized.

**Admission Standards.** A resident must have earned a masters or doctoral degree in speech/language pathology and/or audiology from an accredited institution of higher learning and must hold a certificate of Clinical Competence from the American Speech and Hearing Association and must hold or be qualified for a license to practice in North Carolina.

**Application Procedures.** Applications for admission to the residency in September must be received by 1 March of the year in which the residency will begin. Applications will include:

1. completed Allied Health Division and Center for Speech and Hearing Disorders forms;
2. official transcript from the institution granting the terminal degree;
3. personal interview to be arranged by appointment; and
4. letters of recommendation from at least three persons able to evaluate the applicants professional strengths and weaknesses.

Applicants will be notified regarding admission by 15 April.

**Stipend.** A modest stipend may be available for the twelve-month residency, depending on availability of funds.

# Appendix



## Judicial System of the Division of Allied Health Education

Duke University expects and requires of all its students full cooperation in developing and maintaining high standards of scholarship and conduct. Each student is subject to the rules and regulations of the University currently in effect or which are put into effect from time to time by the appropriate authorities of the University. Any student, in accepting admission, indicates willingness to subscribe to and be governed by these rules and regulations. Authority to establish a judicial system for allied health students is contained in Article 3.010 of the Judicial Structure of Duke University as published in the Duke University *Bulletin of Information and Regulations*.

The Honor System of the Duke University Medical School as found in the Bylaws of the Davison Society does not apply to allied health students since only medical students may belong to the Davison Society. Students in the Physical Therapy and Health Administration programs are exempted from this judicial code since they are governed by the rules and regulations of the Graduate School.

## The Judicial Code

### *Section I. Definition.*

- a. The name of the system hereinafter provided for shall be the "Judicial System."
- b. The group of students hereinafter called the "Judicial Council" shall be composed of students matriculating in the Allied Health Division of the School of Medicine excluding the Health Administration and Physical Therapy programs.
- c. Violations shall consist of:
  1. Academic Dishonesty.
  2. Assault and Battery.
  3. Theft.
  4. Knowingly furnishing false information to any University judicial or police authority, or any academic or administrative official of the University acting in an official capacity.
  5. Failure to provide personal identification to any University judicial or police authority, or any academic or administrative official of the University acting in an official capacity.
  6. Contempt of a University judicial body (including failure to respond to a summons; or to testify when asked to do so, except when one's testimony may be self-incriminating). See the rights of the accused, Section V.
  7. Fraud (including falsification or misuse of auto registration, meal tickets, library slips, laundry slips, or student identification cards).
  8. Willful and malicious damage to University property, or to the property of members of the University community.
  9. Disorderly conduct.
  10. Illegal entry into University buildings or rooms.
  11. Gambling.
  12. Obsenity.
  13. Possession, use, or distribution of illegal drugs except those for legally authorized medical purposes and scientific research.



d. The jurisdiction of the Allied Health Judicial Council shall be limited to cases in which the accused is a student enrolled in an educational program administratively assigned to the Division of Allied Health, School of Medicine, and which might result in a penalty of probation or greater as decided by the panel listed in Section VI below.

## *Section II. Preferment of Charges*

a. Charges shall be preferred in the following manner:

1. The Accuser shall state in writing that a violation as listed in Section I(c) has been committed. The Accuser shall specify the violation and identify the Accused indicating the circumstances under which the alleged violation occurred. The Accuser's statement shall be countersigned by another who has knowledge of the alleged violation. The Accuser shall be a fellow student, faculty, staff, or administrative member of the University Community.

2. The Accuser shall deliver the duly countersigned written accusation within seventy-two hours of the occurrence of the violation in a sealed envelope to the Associate Dean along with supporting evidence or documents.

3. The Accused shall be notified within seventy-two hours by the Associate Dean that he/she has been accused of a violation of the Judicial Code.

4. Within forty-eight hours of notification of such accusation, the Accused shall elect one of the following courses;

i. To appeal the charges directly to the Associate Dean, Allied Health Education. In those cases the Associate Dean retains the right to discuss the charges with the Accused, the Accuser and other persons having knowledge of the case. After reviewing all available information, the Associate Dean will make a decision as to the guilt or innocence of the Accused. If a decision of innocence is made, all documents pertaining to the accusation will be destroyed. If a decision of guilt is made, the Associate Dean will impose a sanction according to the severity of the violation and in keeping with Section VI(e) of the Judicial Code. The decision of the Associate Dean is considered final and there is no further recourse, nor appeal.

ii. To have the charge referred to the Judicial Council as provided for in Section III(a) of the Judicial Code.

## *Section III. Role of the Dean, Medical and Allied Health Education, School of Medicine.*

a. The Associate Dean, Allied Health Education, shall have responsibility for receiving complaints and conducting investigations concerning offenses within the jurisdiction of the Judicial Council. The Council shall hear no case without a finding of probable cause by a group consisting of the Dean, Associate Dean for Allied Health Education, and the Chairman of the Judicial Council whose signatures to the charge(s) shall constitute sufficient evidence of such finding. See Section IV(b).

b. The Office of the Dean shall maintain a precedent file for the use of any faculty member, administrative person, or student involved in the case including the Accused, his adviser, members of the Judicial Council, and any others so designated for such privilege by the Council. The file shall consist of a general description of the charges and facts of each case including a summary of the final action taken and the reasoning involved. No specific names or details shall be included.

## *Section IV. Conduct of the Investigation.*

Upon receiving a complaint, the Associate Dean, Allied Health Education, shall do the following:

a. In conducting the investigation, the Associate Dean shall promptly assemble all evidence relevant to the allegation. This investigation might include but shall not be limited to the following: holding an informal preliminary hearing of testimony, interviewing the Accused, interviewing any holder of evidence, gathering documents and records. The Accused shall be informed of his right to remain silent and his right to an adviser as defined herein before the Dean or others ask any questions of him.

b. The Dean, Associate Dean, and Judicial Council Chairman shall review all evidence gathered by the investigation and determine jointly and promptly whether or not there is probable cause for believing the Accused committed the alleged act. They shall examine University and Community regulations to determine whether or not the commission of the alleged act might be held to violate any of the said regulations. If they find no probable cause, no further action shall be taken on the matter. If they find that the case in which there is probable cause is not within the providence of the Judicial Council, they shall refer it to the appropriate body. If probable cause is found, the allegation will be sent to the Judicial Council in the manner prescribed in Section IV(d).

c. In exercising their judgment as to whether or not charges should be preferred against any alleged offender, they shall not only determine whether probable cause exists but also consider:

1. Any civil or criminal liability the Accused may have already incurred by reasons of the actions of any civil tribunal. If in their judgment, the liability so incurred adequately vindicated the interest of the School of Medicine in punishment of the Accused, they shall not prefer

charges. They shall report to the Judicial Council their findings of probable cause and reasons for not preferring any charge.

2. Any civil or criminal action that may be pending in any civil tribunal. If, in their judgment, prompt trial before the Judicial Council would be prejudicial and unreasonably burdensome to the Accused in respect to the civil tribunal proceedings, notwithstanding the finding of probable cause, they may defer or abstain from preferring charges. In making their decision they shall consider the nature of the offense, the nature of the defense that may be offered in either the civil or School of Medicine proceeding, the likely delay in the civil proceedings, and especially any possible impairment of the Accused's ability to defend himself in either proceeding by reason of their contemporaneous pendency. If, after a finding of probable cause, they decide either to defer preferring charges or definitely to abandon them in the situations covered by this paragraph, they shall nevertheless report to the Judicial Council their finding of probable cause and their reasons for deferring or abandoning the preferring of charges.

3. Whether any civil or criminal action is threatened or likely. In this situation, they shall be governed by the same considerations set forth in paragraph c(2), and in addition by the degree of likelihood of civil or criminal proceedings against the Accused. If, after a finding of probable cause, they decide either to defer preferring charges or definitely to abandon them, in the situations covered by this paragraph, they shall nevertheless report to the Judicial Council their finding of probable cause and their reasons for deferring or abandoning the preferring of charges.

d. Submission to Judicial Council. If the Dean, Associate Dean and Judicial Council Chairman find probable cause and decide to prefer charges, a charge sheet shall be immediately drawn up.

1. The charge sheet shall include at least the following information:

The name of the Accused, a brief description of the alleged act, the regulations which the act violates, the date on which the alleged act did occur, the date on which charges are preferred, and the attesting signatures of the Dean, Associate Dean and Chairman of the Judicial Council.

2. A written report containing the findings of the investigation shall accompany the charge sheet. This report shall contain all evidence gathered in the preliminary investigation with its sources and any evidence gathered in subsequent investigations, with its sources. Nowhere in this report shall a personal opinion be expressed as to the merits of a piece of evidence, or as to the guilt or innocence of the Accused; however, where there are conflicts in the evidence, they shall draw the attention of the Judicial Council to them. The report shall become a part of the written record of the Hearing. If a majority of the Judicial Council receiving this report believe that their Council does not have jurisdiction over the case in question, the case shall be postponed and the Chairman of the Council shall refer the matter to the Chairman of the University Judicial Board who shall appoint a three-man subcommittee who shall determine the question of jurisdiction. Its decision shall be final.

e. The Dean shall subpoena witnesses as directed by the Judicial Council.

#### *Section V. Procedural Safeguards.*

a. The hearing of all charges shall take place promptly, ordinarily within ten days following the presentation of the charges to the Accused. The Accused shall be given notice to appear, written notice of the charge, and a written text of the regulations which he/she is accused of violating, the report of the Dean, a statement of his/her procedural rights, a list of members of the Judicial Council, and any other material that the Judicial Council instructs the Dean to supply him at least seventy-two hours before the Hearing. If the accused desires additional time in which to prepare a defense, the Chairman of the Council may be petitioned to grant a reasonable delay of the Hearing. The Accused may waive the notice and the seventy-two hour notification period.

b. No person presenting evidence against the Accused shall at any time sit in judgment upon him.

c. The Accused has the right to challenge on the grounds of prejudice any member of the Council sitting on his case. If an Accused makes such a challenge, the Council shall deliberate in private to determine whether cause exists. By a majority vote of the members of the tribunal (excluding the member being challenged), a member shall be removed from the case and replaced by a person who is a member in good standing of the Allied Health Division of the School of Medicine.

d. The Accused has the right and will be advised of his right to produce witnesses (including no more than two character witnesses), introduce documents, and offer testimony in his own behalf. He, but not his adviser, may question all witnesses. An Accused, with the assistance of an adviser, may submit questions in writing to the Chairman. The Chairman shall ask such questions submitted to him if they are fair and relevant. A copy of the questions shall be appended to the record.

e. A person having direct knowledge relevant to a case being heard by the Board is a material witness. The Dean may require the appearance of material witnesses. He shall notify them of the time, place and purpose of their appearance. He shall also require, upon written request of the complainant of the Accused, the appearance of material witnesses. He shall notify such witnesses of the time, place and purpose of their appearance.

f. The Accused has the right to examine the written statement of any witness relevant to his case at least seventy-two hours before the hearing. He has the right to be faced by any witness who has given a statement relevant to his case at the hearing if the witness's attendance can be secure.

g. The hearing will be conducted in private unless the Accused requests an open hearing. If any objection is raised to conducting an open hearing in any particular case, the Council shall decide the issue by majority vote. If the decision is made not to hold an open hearing, the Accused shall be informed in writing of the reasons for the decision.

h. The Council shall consider only the report of the Dean, documents submitted into evidence, and the testimony of the witnesses at the hearing in reaching its decisions.

#### *Section VI. The Judicial Council.*

a. The Membership of the Judicial Council shall be composed, in alternate years, of an elected representative of the programs under the jurisdiction of the School of Medicine, Allied Health Education. Program membership shall be as follows:

##### *Even Numbered Years*

Clinical Psychology Internship  
Radiologic Technology Program  
Medical Technology Program  
Cytotechnology Program  
Electrophysiology Program  
Pastoral Counseling Program

##### *Odd Numbered Years*

Physicians Associate Program  
Nuclear Medicine Technology Program  
Pathologist's Assistant Program  
Anesthesia  
Pharmacy Residency Program

b. The members shall elect their chairman. The chairman shall preside but shall not vote except in case of a tie. A quorum shall exist when two-thirds of the membership is present.

##### *c. Conduct of Hearing.*

1. The hearing of any case shall begin with a reading of the charge by the Chairman of the respective division in the presence of the Accused. The Accused shall then plead guilty or not guilty or move to postpone the hearing for good cause shown. The Accused may qualify a plea, admitting guilt in part and denying it in the other part.

2. The Accused has the right to remain silent in regard to the charges brought against him, before, during and after the hearing. No inference of guilt shall be made from his silence. Any information pertinent to the charges volunteered by the Accused may be used as evidence against him. If he elects to offer testimony as to a specific act of misconduct, he by so electing waives his right to remain silent as to this specific act, and must answer truthfully all questions pertaining to it asked of him.

3. The Chairman of the Judicial Council shall call for a reading of the report from the Dean concerning the case. The Judicial Council shall request the Accused to present his case. The Accused may call and question witnesses. The Council may call and question witnesses to clarify matters which have been the subject of testimony. It should not attempt to act as a prosecutor or as a defense council.

4. All evidence which the Council considers relevant shall be admitted except evidence obtained in violation of University's policy. Specifically, the fact that evidence offered is hearsay or an expression of opinion will not in itself bar the admission of the evidence. Written statements may be admitted but wherever possible oral testimony rather than any written statement should be employed. No one shall be convicted solely on the declaration of one whom the Accused has had no opportunity to examine.

5. The Accused may not be questioned for more than one hour without recess.

6. Pending final judgment on charges (including appeal) against the Accused, his status as a student shall not be changed, nor his right to be on campus or to attend classes suspended, except that the Dean may impose an interim suspension upon any member of the School of Medicine who demonstrates by his conduct, that his continued presence on the campus constitutes an immediate threat to the physical well-being or property of members of the School of Medicine or the property or orderly functioning of the school. The imposition of interim suspension requires that the suspended individual shall immediately observe any restriction placed upon him by the terms of the suspension. The suspended individual shall be entitled to a hearing within three days before the Judicial Council on the formal charges. If he requires additional time to prepare his case before the Judicial Council, he shall be entitled to an informal review of the decision imposing interim suspension by a three-man committee chosen from the members of the Council by its Chairman. Interim suspension is an extraordinary remedy which will be invoked only in extreme cases where the interests of the School and members of its community require immediate action before the Judicial Council can adjudicate formal charges against the suspended individual. If interim suspension is imposed and the Accused is later found innocent, the School shall grant reinstatement and will consider appropriate amends as recommended by the Judicial Council with respect to that student's academic responsibilities incurred during the period of suspension.



7. A tape recording and a digest shall be kept of the initial hearing for a minimum of three years. The basis for the decision shall be summarized clearly in brief, numbered paragraphs. Any dissenting opinions shall be similarly explained.

8. The Judicial Council, with the consent of the Accused, shall have the right to amend the charges at any time during a hearing to conform to the evidence. If the Accused does not consent to the amendment of the charges, the Council may, nevertheless, order them amended to conform to the evidence. If, in the judgment of the Judicial Council, a delay is not necessary to enable the Accused to defend himself against the amended charge, the hearing shall continue. If a delay appears necessary, the Judicial Council shall so order it.

d. The Verdict.

1. After hearing the evidence and summations offered by the parties, the Judicial Council shall consider its verdict and judgment in closed session. The verdict shall consist of a simple statement of the significant acts done or not done by the Accused. If the Judicial Council is unable to say that there is clear and convincing evidence that an act was done, then the Judicial Council shall conclude that the act was not done. A similar rule shall govern in the case of a failure to act. The judgment shall consist of a finding of guilty or not guilty of the charge and when the Accused is found guilty, a statement of punishment assessed. Any judgment of suspension or expulsion must be concurred in by at least one-half of those members of the Judicial Council present and voting. Other questions, including the verdict, the finding of guilty or not guilty, shall be governed by the same vote.

2. The Judicial Council by a majority vote may decide to rehear a case in which significant new evidence can be introduced in behalf of the Accused.

3. The Chairman of the Judicial Council shall promptly inform the Dean in writing of the decision of the hearing committee. The Dean shall promptly notify the defendant of the verdict in his case and shall at the same time inform him of his right to appeal.

e. Sanctions. The Judicial Council shall have the power to recommend the following penalties:

1. Expulsion: Dismissal from the School of Medicine with the recommendation that the person never be readmitted.

2. Suspension: Dismissal for a specified period of time in which the student is ineligible to proceed with work for credit.

3. Probation: An action which places the student on notice that his conduct has not been satisfactory. The student is notified in writing of expulsion, suspension, or probation and a copy of the letter remains in the student's record as a permanent record.

4. No disciplinary action.

5. Any other lesser penalty deemed warranted in a particular case. This might include censure, admonition, etc..

f. Imposition of Sanctions.

The Dean, Medical and Allied Education, shall impose the sanction(s) recommended by the Judicial Council.

g. Right of Appeal.

1. On any sanction imposed pursuant to paragraph e, the Accused shall have the right to appeal to the Dean. A written notice of appeal must be submitted to the Office of the Dean within forty-eight hours of the time the Accused is apprised of the findings of the Judicial Council and imposition of sanctions.

2. A written draft of the appeal must be submitted within one week of the time the Accused is apprised of the findings. The appeal shall document the grounds on which it is made. The appeal shall be made on the following grounds only:

a. Procedural error substantially affecting the rights of the Accused.

b. Incompatibility of the verdict with the evidence.

c. Excessive penalty not in accord with "current community standards".

d. New evidence of a character directly to affect the verdict but on which the original tribunal had refused a new hearing.

e. Error in applying or interpreting the rule under which the case was originally tried.

f. New evidence which may directly affect the verdict. In these circumstances, the case will be referred back to the Judicial Council for review.

3. In no case shall an appeal from the Judicial Council result in a *de novo* hearing of previously heard testimony or other evidence; However:

a. The documents transmitted by the original tribunal shall include the tapes of the testimony taken at the hearing. The Accused may, at his own expense, have a transcription of the tape made.

b. The original tribunal shall provide for the Dean written opinions, containing the reasoning upon which the majorities based their decision and any dissenting opinions of members thereof.

c. The Accused shall submit to the Dean a written statement containing the ground(s) for his appeal and his arguments.

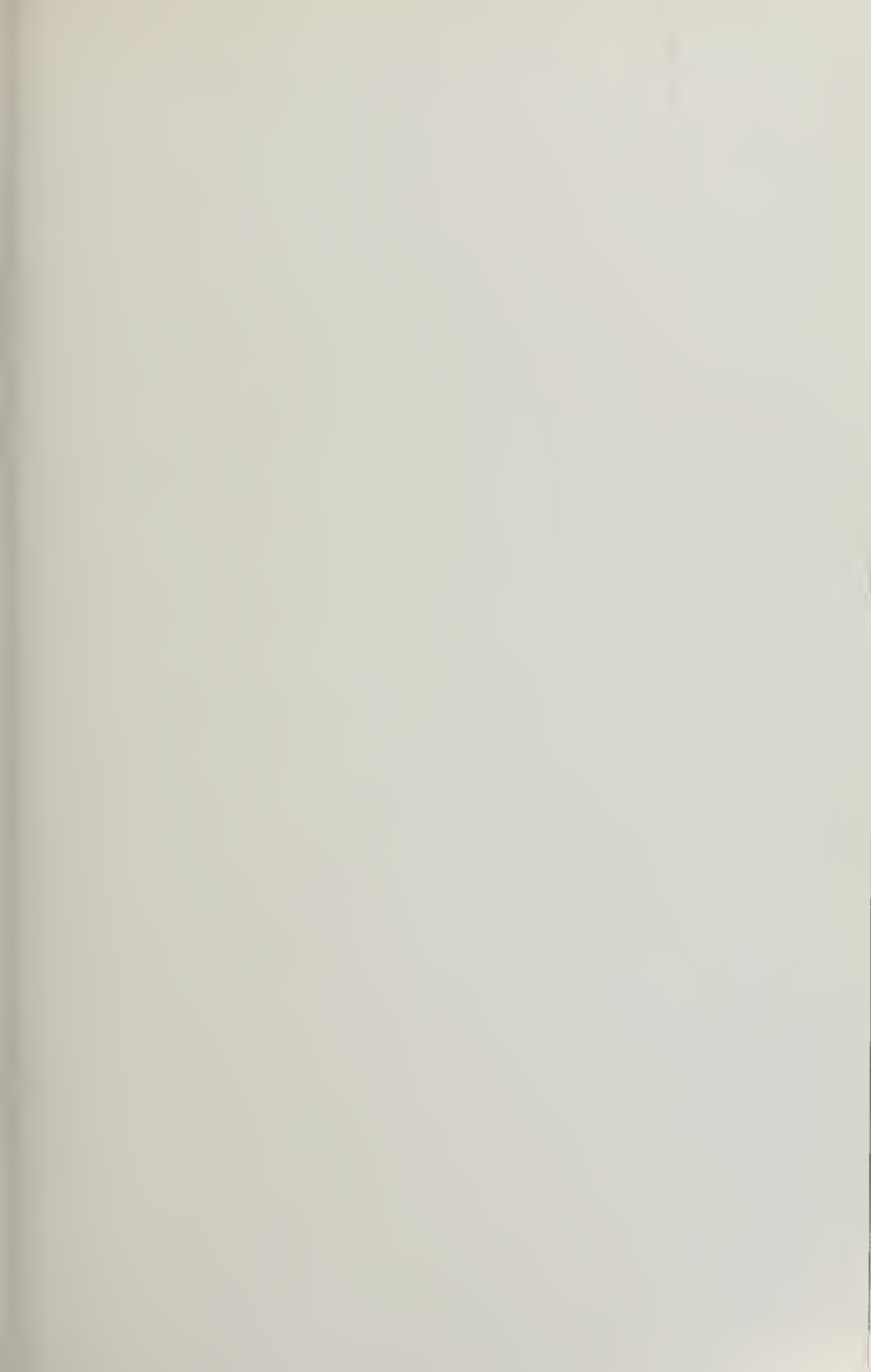


- d. The Accused shall be allowed to make an oral statement to the Dean to amplify his written arguments. The Dean may question the Accused at this time about his oral statement or his written statement, but shall confine himself to the issues on appeal. These additional statements and arguments shall be recorded.
  - e. The Dean may call a representative of the original tribunal to answer questions concerning written opinions submitted in accordance with paragraph b of this section. This material shall likewise be incorporated in the record.
  - f. In cases where the Dean acquits the Accused, changes the penalty, or directs the original tribunal to conduct a new hearing, he shall submit to the original tribunal a detailed written opinion as to his reasoning. The opinion would be similar to that prescribed in paragraph b of this section.
4. Decisions of the Dean shall be promptly communicated to the applicant with a copy to the original tribunal.
5. The term Dean shall include not only persons appointed to the office but also any other person or persons appointed to perform the functions of the office. The Dean may consult with such members of the University Community as he chooses concerning the disposition of the appeal.
- h. Other Powers. In the case where a student is handicapped in his performance of any School of Medicine responsibilities because of his required attendance at a hearing, the Judicial Council may recommend to the authorities involved that appropriate amends be made.



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*Directory of*

*Officers, Faculty,*

*and Staff*



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1979  
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*Directory of  
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# Officers, Faculty, and Staff 1978-79



# The Corporation

## THE UNIVERSITY TRUSTEES

*(The date in parentheses indicates the year of election.)*

### Trustees whose terms expire 30 June 1979

- Anthony Drexel Duke (1976), New York, N.Y.  
John A. Forlines, Jr. (1974–75; 1976), Granite Falls, N.C.  
C. Howard Hardesty, Jr. (1974), Greenwich, Conn.  
Alfred M. Hunt (1967), Pittsburgh, Pa.  
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John Kevin Moore (1976), Durham, N.C.  
William R. Pitts (1968), Charlotte, N.C.  
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### *From the Alumni*

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A. Jack Tannenbaum (1977), Greensboro, N.C.  
Edwin C. Whitehead (1974), Greenwich, Conn.

### *From the Alumni*

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Isobel Craven Lewis (1973), Lexington, N.C.  
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Merrimon Cuninggim (1963–77), Winston-Salem, N.C.  
Norman Edward Edgerton (1941–69), Raleigh, N.C.  
<sup>3</sup>Benjamin Ferguson Few (1941–67), Southport, Conn.  
W. Kenneth Goodson (1966–69; 1972–78), Richmond, Va.  
Julius Welch Harriss (1947–73), High Point, N.C.  
Calvin Bryan Houck (1951–67), Roanoke, Va.  
Amos Ragan Kearns (1945–75), High Point, N.C.

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<sup>2</sup>Resigned 7–28–78.

<sup>3</sup>Deceased 3–5–78.



George Crews McGhee (1962-77),  
Middleburg, Va.  
Ben Neely Miller, Jr. (1958-73), Columbia,  
S.C.  
Marshall I. Pickens (1963-74), Charlotte,  
N.C.  
Robert Henry Pinnix (1959-73), Gastonia,  
N.C.  
Henry E. Rauch (1964-74), Greensboro, N.C.  
Frank Odell Sherrill (1959-66), Charlotte,  
N.C.  
James Raymond Smith (1934-67), Mt. Airy,  
N.C.  
Estelle Flowers Spears (1951-67), Durham,  
N.C.  
Richard Elton Thigpen (1953-73), Charlotte,  
N.C.  
Walter McGowan Upchurch, Jr. (1964-77),  
New York, N.Y.  
James Frederick Von Canon (1959-75),  
Sanford, N.C.  
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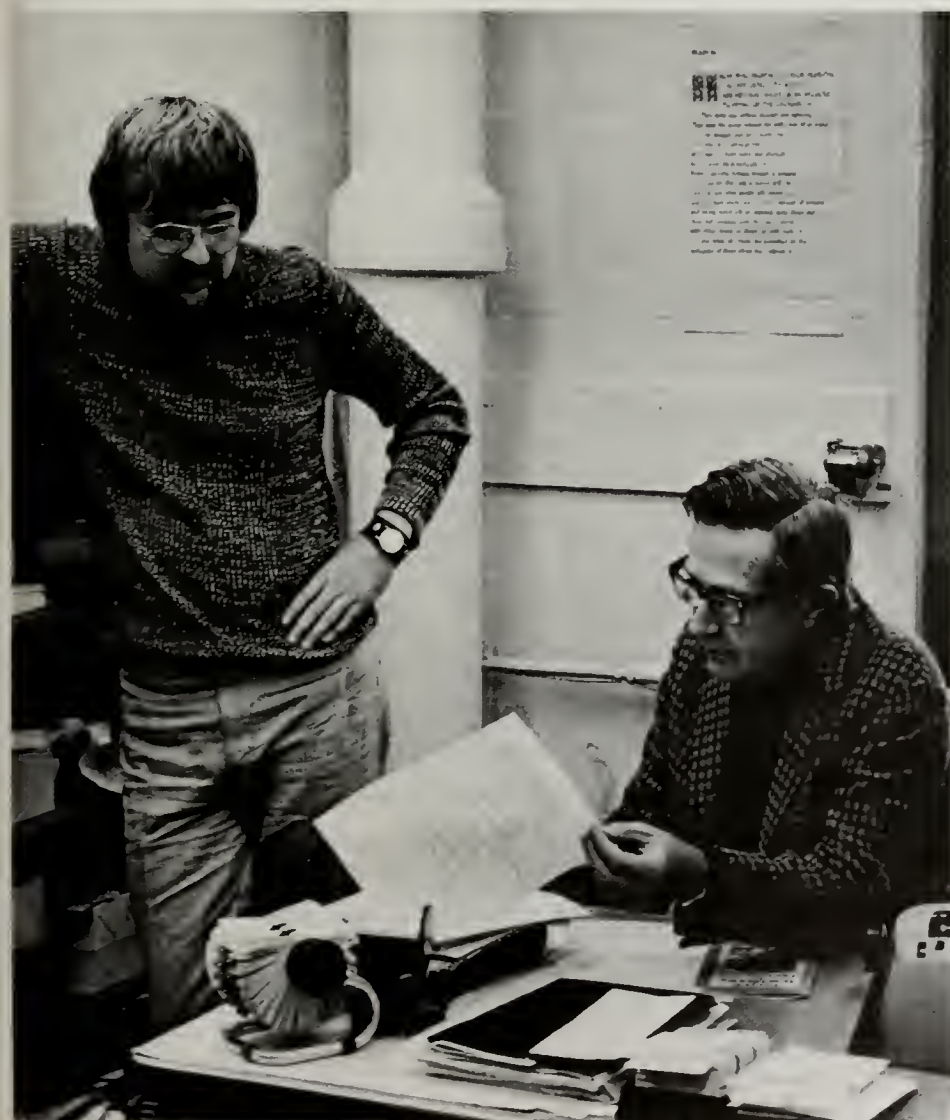
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<sup>a</sup>Deceased 7-8-78.



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<sup>9</sup>Deceased 11-14-78.

<sup>10</sup>Deceased 1-23-78.

<sup>11</sup>Deceased 11-25-78.

<sup>12</sup>Deceased 7-15-78.



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<sup>12a</sup>Deceased 2-13-79.

<sup>13</sup>Deceased 8-3-78.

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<sup>13a</sup>Deceased 12-31-78.

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- Adams, Dolph Oliver (1972), Ph.D. (North Carolina at Chapel Hill), M.D. (Med. Coll. of Georgia),  
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- Addison, Winnifred Allen (1971-72; 1976), M.D. (Duke), *Assistant Professor of Obstetrics and Gynecology*,  
P.O. Box 727, Hillsborough, N.C.
- Adelman, Mark R. (1971), Ph.D. (Chicago), *Assistant Professor of Anatomy*, 1303 Lakewood Avenue
- Akwari, Onyekwere E. (1978), M.D. (Southern California), *Associate Professor of Surgery*, 2734  
Spencer Street
- Alexander, Irving E. (1963), Ph.D. (Princeton), *Professor of Psychology and Professor of Medical Psychology in  
the Department of Psychiatry* 1111 Watts Street
- Alexander, Nancy Burns (1977), M.S.N. (Duke), *Instructor in Nursing*, Apartment E, 3088 Colony  
Road
- Allard, William K. (1975), Ph.D. (Brown), *Professor of Mathematics*, 200 Monticello Avenue
- Allen, B. Titus, Jr. (1978), M.D. (Duke), *Associate in the Department of Medicine*, 4102 Trotter Ridge  
Road
- <sup>15</sup>Allin, Craig Willard (1978), Ph.D. (Princeton), *Visiting Assistant Professor of Political Science*, 802  
Underwood Avenue
- Alt, Arthur Tilo (1961-65; 1967), Ph.D. (Texas), *Associate Professor of Germanic Languages and Literature*, 3  
Scott Place
- Amos, Dennis Bernard (1962), M.D. (Guy's Hospital, London), *James B. Duke Professor of Immunology and  
James B. Duke Professor of Experimental Surgery*, 2204 Pike Street
- Andersen, Judith Cooper (1976), M.D. (Jefferson Med. Coll.), *Assistant Professor of Medicine and  
Associate in the Department of Pathology*, 2410 Wrightwood Avenue
- Anderson, C. William (1978), Ph.D. (Cincinnati), *Assistant Professor of Chemistry*, Apartment 26-F,  
886 Louise Circle
- Anderson, Carl L. (1955), Ph.D. (Pennsylvania), *Professor of English*, Route 2, Cabe Ford Road
- <sup>15a</sup>Anderson, David Roy (1975), Ph.D. (North Dakota), *Associate in Medical Psychology in the Department of  
Psychiatry*, 5808 Ridgeview Road
- Anderson, Edward Everett (1966), M.D. (Duke), *Professor of Urology*, 3808 Darwin Road
- <sup>16</sup>Anderson, Jane Elizabeth (1973), M.S. (Boston), *Assistant Professor of Nursing*, Apartment 16-C, 700  
Morreene Road
- Anderson, Joy Satre (1978), Ph.D. (North Dakota), *Medical Research Associate in Immunology in the  
Department of Microbiology and Immunology*, 5808 Ridgeview Road
- <sup>17</sup>Anderson, Lewis Edward (1936), Ph.D. (Pennsylvania), *Professor of Botany*, 2736 Montgomery Street
- Anderson, Nels C., Jr. (1966), Ph.D. (Purdue), *Associate Professor of Physiology and Assistant Professor of  
Obstetrics and Gynecology*, Route 1, Box 189, Hillsborough, N.C.
- Anderson, Page Albert Willis (1973), Ph.D. (Duke), *Associate Professor of Pediatrics and Assistant Professor  
of Physiology*, 3815 Swarthmore Drive
- Anderson, Peter H. (1974), Ph.D. (Oregon), *Assistant Professor of Pathology*, 705 Chalice Street
- Anderson, Roger Fabian (1950), Ph.D. (Minnesota), *Professor of Forest Entomology*, 2528 Perkins Road
- Anderson, Thomas W. (1977), Ph.D. (Duke), *Adjunct Associate in the Department of Physiology*, 2001  
Dartmouth Drive
- Anderson, William B. (1965), M.D. (Minnesota), *Assistant Professor of Psychiatry*, 2713 Sevier Street
- Anderson, William Banks, Jr. (1962), M.D. (Harvard), *Professor of Ophthalmology*, 2401 Cranford  
Road
- Angelillo, John C. (1976), M.D. (Duke), *Assistant Professor of Oral and Maxillofacial Surgery*, 5117 Pine  
Way
- Angle, Hugh Vaughn (1973), Ph.D. (Texas Christian), *Assistant Professor of Medical Psychology in the  
Department of Psychiatry*, 1304 Clermont
- Anlyan, William G. (1951), M.D. (Yale), D.Sc., *Professor of Surgery*, 1516 Pinecrest Road
- <sup>18</sup>Antonovics, Janis (1970), Ph.D. (Univ. Coll. of North Wales), *Professor of Botany*, 1601-D Sedgefield  
Road
- <sup>19</sup>Applewhite, James William (1971), Ph.D. (Duke), *Associate Professor of English*, 606 Candlewood  
Place
- Apte, Mahadev L. (1965), Ph.D. (Wisconsin), *Associate Professor of Anthropology*, 1518 Southwood  
Drive
- Arena, Jay Morris (1933), M.D. (Duke), *Professor of Pediatrics*, 1403 Woodburn Road
- Arges, Kiro Pete (1953), M.S.C.E. (Tennessee), *Assistant Professor of Civil Engineering*, 802 West  
Maynard Avenue
- Armstrong, Alan Gordon (1978), *Visiting Professor of Economics*, 522 Wofford Road

<sup>15</sup>Through 5-31-78.

<sup>15a</sup>Through 9-30-78.

<sup>16</sup>Leave of absence 9-1-78 through 8-31-80.

<sup>17</sup>Sabbatical leave, fall 1978-79.

<sup>18</sup>Leave of absence, spring 1977-78.

<sup>18</sup>Sabbatical leave, fall 1978-79.



- Arthur, James Greig (1976), Ph.D. (Yale), *Professor of Mathematics*, 1614 Woodburn Road
- Artley, John Leslie (1955), D.Eng. (Johns Hopkins), *Professor of Electrical Engineering*, 2714 Wrightwood Avenue
- Ashton, Patricia R. (1972), A.B. (Goucher Coll.), *Associate in Pathology*, 15 Ashley Road
- <sup>20</sup>Askins, Ruth S. (1972), M.S.N. (North Carolina at Chapel Hill), *Assistant Professor of Nursing*, 1906 West B Street, Butner, N.C.
- Baber, Collins Earl (1977), M.D. (Duke), *Assistant Professor of Radiology*, 1014 Shepherd Street
- Back, Kurt Wolfgang (1959), Ph.D. (Massachusetts Inst. of Tech.), *James B. Duke Professor of Sociology and Professor of Medical Sociology in the Department of Psychiatry*, 2753 McDowell Road
- Bagne, Farideh Rowshan (1978), Ph.D. (Pennsylvania), *Associate Professor of Radiology*, 2017 North Lakeshore Drive, Chapel Hill, N.C.
- <sup>21</sup>Baier, Roger W. (1972), Ph.D. (Washington), *Assistant Professor of Chemistry*, P.O. Box 338, Morehead City, N.C.
- <sup>22</sup>Bailey, Joseph Randle (1946), Ph.D. (Michigan), *Professor of Zoology*, 2517 Sevier Street
- Bailey, Lloyd R. (1971), Ph.D. (Hebrew Union Coll.), *Associate Professor Old Testament in the Divinity School*, 4122 Deepwood Circle
- Baker, Frank (1960), Ph.D. (Nottingham, England), *Professor of English Church History in the Divinity School*, 1505 Pinecrest Road
- Baker, John Terrill (1977), M.D. (Harvard), *Assistant Professor of Medicine*, Apartment 4-I, 1315 Morreene Road
- Baker, Kenneth R. (1973), Ph.D. (Cornell), *Associate Professor of Business Administration*, 4113 Huckleberry Drive, Raleigh, N.C.
- Baker, Patricia J. (1977), Ph.D. (Illinois), *Assistant Medical Research Professor of Pediatrics*, 320 Reade Road, Chapel Hill, N.C.
- <sup>23</sup>Baldwin, Steven Worth (1970), Ph.D. (California Inst. of Tech.), *Associate Professor of Chemistry*, 3917 Inwood Drive
- Baligh, Helmy H. (1967), Ph.D. (California at Berkeley), *Professor of Business Administration*, Balnagowan Farm, Route 3, Hillsborough, N.C.
- Ballantyne, Robert H. (1962), Ed.D. (Washington State), *Associate Professor of Education*, 2510 Wrightwood Avenue
- <sup>24</sup>Barber, James David (1972), Ph.D. (Yale), *James B. Duke Professor of Political Science*, Route 2, Box 371B
- <sup>25</sup>Barber, Richard Trampeter (1970), Ph.D. (Stanford), *Associate Professor of Zoology and Associate Professor of Botany*, 101 Sunset Lane, Beaufort, N.C.
- Barlow, Norman Howard, (1955), Ph.D. (Duke), *Assistant Professor of Romance Languages*, 3852 Somerset Drive
- Barnes, Robert Lloyd (1965), Ph.D. (Duke), *Professor of Forest Biochemistry*, Route 1, Box 184-X, Hillsborough, N.C.
- Barr, Roger Coke (1969), Ph.D. (Duke), *Associate Professor of Biomedical Engineering and Associate Professor of Pediatrics*, Route 2, Box 125, Chapel Hill, N.C.
- Barry, William F., Jr. (1955), M.D. (Pennsylvania), *Professor of Radiology*, 3208 Ridge Road
- Bartlett, Robert Charles (1976), M.A. (New York University), *Professor of Physical Therapy*, 4020 Nottaway Road
- Bartol, Genevieve Marie (1978), Ed.D. (Columbia), *Associate Professor of Nursing*, 637 Starmont Drive
- Bartolome, Jorge V. (1978), Ph.D. (Chile), *Assistant Medical Research Professor of Pharmacology*, Box 3813 Duke Medical Center
- Barton, Joanne A. (1974), M.S.N. (Kentucky), *Clinical Instructor in the School of Nursing and Clinical Associate in Pediatrics*, 914 Hale Street
- Bashore, Thomas M. (1976), M.D. (Ohio State), *Assistant Professor of Medicine*, 809 Churchill Drive, Chapel Hill, N.C.
- Bassett, Frank Houston, III (1963), M.D. (Louisville), *Professor of Orthopaedics and Assistant Professor of Anatomy*, 3940 Dover Road
- Battle, Joseph (1970), Ph.D. (Michigan), *Associate Professor of Business Administration*, 1636 Marion Avenue
- Baumann, Gilbert (1976), Dr.Sc. (Swiss Federal Institute of Tech.), *Assistant Medical Research Professor of Physiology*, Route 2, Box 431-D, Hillsborough, N.C.
- Baylin, George Jay (1939), M.D. (Duke), R. J. Reynolds Industries *Professor of Medical Education, Professor of Radiology, and Professor of Otolaryngology in the Department of Surgery*, 2535 Wrightwood Avenue
- Beach, William Waldo (1946), B.D., Ph.D. (Yale), *Professor of Christian Ethics in the Divinity School*, 130 Pinecrest Road

<sup>20</sup>Through 8-31-78.

<sup>21</sup>Through 12-31-77.

<sup>22</sup>Sabbatical leave, spring 1978-79.

<sup>23</sup>Sabbatical leave, fall 1978-79.

<sup>24</sup>Sabbatical leave, fall 1978-79.

<sup>25</sup>Sabbatical leave, fall 1978-79.



- Beall, Hie Ping (1974), Ph.D. (Tulane), *Assistant Medical Research Professor of Anatomy and Assistant Medical Research Professor of Physiology*, 1008 Horton Road
- Behar, Victor S. (1968), M.D. (Duke), *Associate Professor of Medicine*, 1821 Woodburn Road
- Behn, Robert D. (1973), Ph.D. (Harvard), *Associate Professor of Policy Sciences*, Apartment 5-1, 200 Seven Oaks Road
- <sup>26</sup>Bell, Michael C. (1975), M.B.A. (George Washington), *Visiting Assistant Professor of Naval Science*, 5802 Sandstone Drive
- Bell, Robert Maurice (1972), Ph.D. (California at Berkeley), *Associate Professor of Biochemistry*, 4300 Rhow Drive
- Bennett, Peter Brian (1972), Ph.D. (Univ. of Southampton, England), *Professor of Anesthesiology and Associate Professor of Physiology*, 3010 Harriman Drive
- Benson, Dudley Woodrow, Jr. (1974), Ph.D. (North Carolina at Chapel Hill), M.D. (Duke), *Assistant Professor of Pediatrics*, Route 2, Box 395, Hillsborough, N.C.
- <sup>27</sup>Bergland, John Kenneth (1973), M.Div. (Union Theological Seminary), *Associate Professor of Homiletics in the Divinity School*, 3920 Berry Bush Place
- Bergquist, Charles Wylie (1972), Ph.D. (Stanford), *Associate Professor of History*, 39 Davie Circle, Chapel Hill, N.C.
- Berry, William Rosser (1978), M.D. (Duke), *Associate in the Department of Medicine*, 1712 Open Air Camp Road
- Beskind, Donald Haskell (1977), LL.M. (Duke), *Assistant Professor of Law*, 12 Scott Place
- Bessent, Helga Wilde (1964), M.A. (Vanderbilt), *Assistant Professor of Germanic Languages and Literature*, 2117 Englewood Avenue
- Bevan, William (1974), Ph.D. (Duke), *William Preston Few Professor of Psychology*, 1540 Hermitage Court
- Biedenbarn, Lawrence Christian, Jr. (1961), Ph.D. (Massachusetts Inst. of Tech.), *Professor of Physics*, 2716 Sevier Street
- Biermann, Alan Wales (1974), Ph.D. (California at Berkeley), *Associate Professor of Computer Science*, 211 Severin Street, Chapel Hill, N.C.
- Bigner, Darell D. (1972), Ph.D. (Duke), *Professor of Pathology, Associate Professor of Experimental Surgery and Lecturer in the Department of Microbiology and Immunology*, 4308 Samoa Court
- Billings, William Dwight (1952), Ph.D. (Duke), *James B. Duke Professor of Botany*, 1628 Marion Avenue
- Bilpuch, Edward G. (1962), Ph.D. (North Carolina at Chapel Hill), *Professor of Physics*, 106 Cherokee Circle, Chapel Hill, N.C.
- Bird, Warren P. (1968), M.S.L.S. (Columbia), *Associate Professor of Medical Literature*, 35 Stoneridge Circle
- Bittikofer, John A. (1970), Ph.D. (Purdue), *Associate in Clinical Biochemistry*, 424 Valley Drive
- Bjornsson, Thorir Dan (1978), M.D. (Iceland), *Assistant Professor of Pharmacology and Assistant Professor of Medicine*, 509 Colony Woods Drive, Chapel Hill, N.C.
- Black, Mary Ann (1974), M.S. (North Carolina at Chapel Hill), *Associate in Psychiatric Social Work in the Department of Psychiatry*, 615 Orindo Drive
- Blackburn, Elizabeth C. (1972), M.Ed. (Virginia Commonwealth), *Associate in Radiology*, 1009 Stonehedge Avenue
- Blackburn, John O. (1962), Ph.D. (Florida), C.P.A., *Professor of Economics*, 208 Pineview Road
- Blackmon, Lillian R. (1973), M.D. (Arkansas), *Associate Professor of Pediatrics and Associate Professor of Obstetrics and Gynecology*, 1535 Hermitage Court
- Blake, Robert Lincoln (1949), *Associate in Medical Art in the Division of Audiovisual Education*, 609 Ruby Street
- Bland, Kalman P. (1973), Ph.D. (Brandeis), *Associate Professor of Religion*, 503 Longleaf Drive, Chapel Hill, N.C.
- Blaydon, Colin Campbell (1975), Ph.D. (Harvard), *Associate Professor of Policy Sciences and Associate Professor of Business Administration*, 1817 Woodburn Road
- Blazer, Daniel G., II (1976), M.D. (Tennessee), *Assistant Professor of Psychiatry*, 5102 Longleaf Drive
- Bloch, Edmond Cecil (1978), M.B. (Cape Town, South Africa), *Assistant Professor of Anesthesiology*, Apartment 25, 2117 Bedford Street
- Blum, Jacob Joseph (1962), Ph.D. (Chicago), *Professor of Physiology*, 2525 Perkins Road
- Blumenfeld, Donald S. (1977), B.A. (Rutgers), *Lecturer in Dance*, 604 Cleaveland Street
- Bobula, James A. (1975), Ph.D. (Ohio State), *Assistant Professor of Community and Family Medicine*, 3619 Dover Road
- Bocchino, Anthony J. (1974), J.D. (Connecticut), *Associate Professor of Law*, 3803 Hillgrand Drive
- Bolnick, Bruce R. (1974), Ph.D. (Yale), *Assistant Professor of Economics*, 704 Brighton Road
- Bolognesi, Dani P. (1971), Ph.D. (Duke), *Professor of Experimental Surgery and Associate Professor of Virology*, 2511 Sevier Street

<sup>26</sup>Through 7-6-78.

<sup>27</sup>Status changed to Institutional Advancement.

- Bonar, Robert A.** (1959), Ph.D. (California at Berkeley), *Associate Professor of Biophysics in the Department of Surgery*, Route 2, Box 712, Chapel Hill, N.C.
- Bonaventura, Celia J.** (1975), Ph.D. (Texas), *Assistant Medical Research Professor of Biochemistry*, 127 Circle Drive, Beaufort, N.C.
- Bonaventura, Joseph** (1972), Ph.D. (Texas), *Assistant Medical Research Professor of Biochemistry*, 127 Circle Drive, Beaufort, N.C.
- Bone, Allan Hadley** (1944), M.M. (Eastman), *Professor of Music*, 2725 Sevier Street
- Bonk, James** (1959), Ph.D. (Ohio State), *Professor of Chemistry*, 112 Pinecrest Road
- Bonner, Jack W., III** (1971), M.D. (Texas), *Assistant Professor of Psychiatry*, 27 Windsor Road, Asheville, N.C.
- Bookhout, Elizabeth Circle** (1932–43; 1945), Ph.D. (New York), *Professor of Physical Education*, 1307 Alabama Avenue
- <sup>28</sup>**Borchardt, Frank L.** (1971), Ph.D. (Johns Hopkins), *Associate Professor of Germanic Languages and Literature*, 100 East Forest Hills Boulevard
- Borstelmann, Lloyd J.** (1953), Ph.D. (California at Berkeley), *Professor of Psychology and Professor of Medical Psychology in the Department of Psychiatry*, 2506 Francis Street
- Bossen, Edward Hecht** (1972), M.D. (Duke), *Associate Professor of Pathology*, 7 Thackeray Place
- Boudewyns, Patrick A.** (1975), Ph.D. (Wisconsin), *Associate Professor of Medical Psychology in the Department of Psychiatry and Lecturer in Psychology (part-time)*, 101 Buena Vista Way, Chapel Hill, N.C.
- Boynton, John E.** (1968), Ph.D. (California at Davis), *Professor of Botany*, 1808 Woodburn Road
- Bracewell, Joyce** (1973), M.S.W. (Florida State), *Associate in Psychiatric Social Work*, 121 East North Ridge Drive, Asheville, N.C.
- Bradford, William Dalton** (1966), M.D. (Western Reserve), *Associate Professor of Pathology and Assistant Professor of Pediatrics*, 3724 Hope Valley Road
- Bradham, Renee Ferree** (1978), M.N.S. (North Carolina at Chapel Hill), *Instructor in the School of Nursing*, 5150 Revere Road
- Bradley, David Gilbert** (1949), Ph.D. (Yale), *Professor of Religion*, 2507 Sevier Street
- Bradsher, Charles Kilgo** (1939), Ph.D. (Harvard), *James B. Duke Professor of Chemistry*, 118 Pinecrest Road
- Braibanti, Ralph** (1953), Ph.D. (Syracuse), *James B. Duke Professor of Political Science*, 3805 Darby Road
- Branch, Eleanor F.** (1972), Ph.D. (Duke), *Associate Professor of Physical Therapy*, 207 Oak Hill Drive
- Brandwajn, Alexandre** (1978), Ph.D. (Univ. of Paris VI), *Associate Professor of Computer Science*, 2503 Cascadilla Street
- Brannon, Linda J.** (1976), Ph.D. (Pennsylvania State), *Clinical Associate in Medical Psychology in the Department of Psychiatry*, 141 Saint Dunstan's Road, Asheville, N.C.
- Brazy, Jane Elmlade** (1976), M.D. (Washington Univ.), *Assistant Professor of Pediatrics and Assistant Professor of Obstetrics and Gynecology*, Route 2, University Acres, Chapel Hill, N.C.
- Brazy, Peter Coffin** (1978), M.D. (Washington University), *Associate in the Department of Medicine*, 3916 Saint Marks Road
- Breslin, Marianne S.** (1968), M.D. (Medical Academy, Dusseldorf, Germany), *Associate Professor of Psychiatry*, 1704 Michaux Road, Chapel Hill, N.C.
- Bressler, Bernard** (1954), M.D. (Washington Univ.), *Professor of Psychiatry*, 5102 Autumn Drive
- Bright, Donald S.** (1975), M.D. (Maryland), *Assistant Professor of Orthopaedic Surgery*, 9 Winthrop Court
- Briner, William H.** (1970), B.S. (Temple), *Assistant Professor of Radiology*, 3100 Ithaca Court
- Broda, Kenneth R.** (1977), Ph.D. (Duke), *Associate in the Department of Pathology*, 1820 Atterbury Lane
- Brodie, H. Keith H.** (1974), M.D. (Columbia), *Professor of Psychiatry and Lecturer in Psychology*, 63 Beverly Drive
- Bromage, Philip Raikes** (1977), M.B. (London University, England), *Professor of Anesthesiology and Professor of Obstetrics and Gynecology*, 5 Sylvan Road
- <sup>29</sup>**Bronfenbrenner, Martin** (1971), Ph.D. (Chicago), *Professor of Economics and Lecturer in History*, 2915 Friendship Road
- <sup>30</sup>**Broome, Oscar Whitfield, Jr.** (1977), Ph.D. (Illinois), *Visiting Associate Professor of Management Sciences in the Graduate School of Business Administration*, 1904 Rolling Road, Chapel Hill, N.C.
- Brown, Charlotte Vestal** (1971), Ph.D. (North Carolina at Chapel Hill), *Assistant Professor of Art*, 1206 Williamson Drive, Raleigh, N.C.
- Brown, Earl I., II** (1960), Ph.D. (Texas), *J. A. Jones Professor of Civil Engineering*, 1631 Marion Avenue
- <sup>31</sup>**Brown, Montague** (1975), D.P.H. (North Carolina at Chapel Hill), *Professor of Health Administration*, 20 Howell Lane, Chapel Hill, N.C.
- <sup>32</sup>**Brown, Toby Louis** (1977), M.D. (North Carolina at Chapel Hill), *Assistant Professor of Radiology*, Route 2, Box 489, Hillsborough, N.C.

<sup>28</sup>Sabbatical leave 1978–79.

<sup>29</sup>Sabbatical leave, fall 1978–79 and leave of absence, spring 1978–79.

<sup>30</sup>Through 5–31–78.

<sup>31</sup>Leave of absence 9–1–78 through 8–31–79.

<sup>32</sup>Through 5–15–78.

- Brumley, George William, Jr. (1967), M.D. (Duke), *Professor of Pediatrics and Associate Professor of Obstetrics and Gynecology*, 3415 Surry Road
- Brundage, Dorothy J. (1968), M.N. (Emory), *Assistant Professor of Nursing*, Route 6, Box 215, Mebane, N.C.
- Bruno, Frederick P. (1972), M.S. (Florida), *Assistant Professor of Radiology*, 813 Chalice Street
- <sup>33</sup>Bryan, Anne-Marie (1964), M.A.T. (Duke), *Assistant Professor of Romance Language*, 1017 Norwood Avenue
- Bryan, Paul Robey, Jr. (1951), Ph.D. (Michigan), *Professor of Music*, 1108 Watts Street
- <sup>34</sup>Buck, Brian (1977), D.Phil. (Oxford), *Visiting Professor of Physics*, Apartment 2-G, 1505 Duke University Road
- Buckingham, Eugene (1978), Ph.D. (Columbia), *Instructor in Psychology*, Apartment M-23, 4216 Garrett Road
- Buckley, C. Edward (1963), M.D. (Duke), *Professor of Medicine and Assistant Professor of Microbiology and Immunology*, 3621 Westover Road
- Buckley, Rebecca Hatcher (1968), M.D. (North Carolina at Chapel Hill), *Professor of Pediatrics and Associate Professor of Immunology*, 3621 Westover Road
- Buckner, Katherine K. (1974), M.S.W. (North Carolina at Chapel Hill), *Associate in Psychiatric Social Work in the Department of Psychiatry*, Box 1206, 309 Glendale Drive, Chapel Hill, N.C.
- Budd, Louis J. (1952), Ph.D. (Wisconsin), *Professor of English*, 2753 McDowell Road
- Buehler, Albert George (1955), M.A. (North Carolina at Chapel Hill), *Professor of Physical Education*, 1718 Woodburn Road
- Bullock, Grace (1957-59; 1967), M.S.N. (North Carolina at Chapel Hill), *Assistant Professor of Nursing*, 3729 Hermine Street
- Burch, Warner Miller, Jr. (1977), M.D. (Bowman Gray), *Associate in the Department of Medicine*, 4311 Rocky Springs Road
- Burdick, Donald S. (1962), Ph.D. (Princeton), *Associate Professor of Mathematics and Associate Professor of Biomedical Engineering*, 108 Emerald Circle
- Burger, Peter C. (1973), M.D. (Northwestern), *Associate Professor of Pathology*, Apartment P-6, 2808 Croasdaile Drive
- Burian, Peter H. (1968), Ph.D. (Princeton), *Associate Professor of Classical Studies*, 1610 Delaware Avenue
- Burkett, Elizabeth (1975), M.S.N. (North Carolina at Chapel Hill), *Clinical Instructor in the School of Nursing and Clinical Associate in the Department of Pediatrics*, 5124 Peppercorn Street
- <sup>35</sup>Burns, Richard O. (1964), Ph.D. (Illinois), *Professor of Microbiology*, 4117 Pavillion Place
- Burton, Larry Weldon (1977), Ph.D. (Duke), *Assistant Medical Research Professor of Anesthesiology*, 5315 Fair Oaks Road
- Burton, Richard M. (1970), D.B.A. (Illinois), *Associate Professor of Business Administration*, 1639 Marion Avenue
- Busse, Ewald W. (1953), M.D. (Washington Univ.), *J. P. Gibbons Professor of Psychiatry*, 1132 Woodburn Road
- <sup>36</sup>Butler, Edmund John (1975), Ph.D. (New York), *Assistant Professor of Mathematics*, Apartment E-14, 901 Chalk Level Road
- Butters, Ronald R. (1967), Ph.D. (Iowa), *Associate Professor of English*, 821 Green Street
- Butzin, Clifford Alan (1978), Ph.D. (California at San Diego), *Assistant Professor of Psychology*, Apartment 1, 804 Lancaster Road
- Buzzard, Gale Herbert (1957), Ph.D. (North Carolina State), *Assistant Professor of Mechanical Engineering*, 2716 Tryon Road
- Byrd, Roger Carl (1978), Ph.D. (Duke), *Instructor and Research Associate in Physics*, Apartment 2, 924 Dacian Avenue
- Cady, Edwin H. (1973), Ph.D. (Wisconsin), *Andrew W. Mellon Professor in the Humanities*, Box 168, Route 4, Hillsborough, N.C.
- Cahow, Clark (1968), Ph.D. (Duke), *Associate Professor in the Faculty of Arts and Sciences*, 1106 Watts Street
- Caldwell, David S. (1976), M.D. (Bowman Gray), *Assistant Professor of Medicine*, 5313 Ventura Drive
- Callaway, Jasper Lamar (1937), M.D. (Duke), *James B. Duke Professor of Dermatology*, 26 Stoneridge Circle
- Cambier, John Clifford (1978), Ph.D. (Illinois), *Assistant Medical Research Professor of Immunology in the Department of Microbiology and Immunology and Assistant Medical Research Professor of Experimental Surgery*, 1819 Cedar Terrace
- Campbell, Richard T. (1974), Ph.D. (Wisconsin), *Assistant Professor of Sociology*, 408 Thornwood Drive, Chapel Hill, N.C.

<sup>33</sup>Sabbatical leave, spring 1978-79.

<sup>34</sup>Through 9-30-78.

<sup>35</sup>Sabbatical leave 9-1-78 through 3-1-79.

<sup>36</sup>Through 8-31-78.



- Camporesi, Enrico M. (1977), M.D. (Univ. of Milan, Italy), *Assistant Professor of Anesthesiology*, 26 Chancery Place
- Cannon, Marjory A. (1976), M.M.Sc. (Emory), *Associate in Physical Therapy*, Apartment 104, 3518 Mayfair Street
- Cant, Nell Wade Beatty (1978), Ph.D. (Michigan), *Assistant Professor of Anatomy*, 1304 The Oaks, Chapel Hill, N.C.
- Carbone, Peter, Jr. (1966), Ed.D. (Harvard), *Associate Professor of Education*, 5509 Pelham Road
- Caron, Marc G. (1977), Ph.D. (Miami), *Assistant Medical Research Professor of Medicine and Assistant Medical Research Professor of Biochemistry*, 2606 Evans Drive
- Carrington, Paul DeWitt (1978), LL.B. (Harvard), *Professor of Law*, 1616 Pinecrest Road
- Carson, Culley Clyde, III (1978), M.D. (George Washington), *Assistant Professor of Urology in the Department of Surgery*, 2719 Spencer Street
- Carson, Robert Charles (1960), Ph.D. (Northwestern), *Professor of Psychology and Professor of Medical Psychology in the Department of Psychiatry*, Apartment 31, 3775 Guess Road
- Carter, James H. (1971), M.D. (Howard), *Associate Professor of Psychiatry*, 3310 Pine Grove Road, Raleigh, N.C.
- Carter, Reginald Denny (1971), Ph.D. (Bowman Gray), *Adjunct Assistant Professor of Community and Family Medicine*, Route 4, Box 63, Hillsborough, N.C.
- Cartmill, Matt (1969), Ph.D. (Chicago), *Associate Professor of Anatomy and Associate Professor of Anthropology*, Route 2, Box 547
- Cartwright, William H. (1951), Ph.D. (Minnesota), *Professor of Education*, 3610 Britt Street
- Caserta, Ernesto G. (1970), Ph.D. (Harvard), *Assistant Professor of Romance Languages*, 2516 Sevier Street
- Casseday, John H. (1972), Ph.D. (Indiana), *Assistant Medical Research Professor of Otolaryngology in the Department of Surgery and Assistant Professor of Psychology*, 2711 Augusta Drive
- Cavanagh, G. S. T. (1962), B.L.S. (McGill), *Professor of Medical Literature*, 42 Kimberly Drive
- Cavenar, Jesse Oscar (1971), M.D. (Arkansas), *Associate Professor of Psychiatry*, 1509 Cumberland Road, Chapel Hill, N.C.
- Cell, John W. (1962), Ph.D. (Duke), *Associate Professor of History*, 1011 Highland Woods, Chapel Hill, N.C.
- Chaddock, Jack B. (1966), Sc.D. (Massachusetts Inst. of Tech.), *Professor of Mechanical Engineering*, 10 Learned Place
- <sup>37</sup>Chafe, William H. (1971), Ph.D. (Columbia), *Associate Professor of History*, 820 Tinkerbell Road, Chapel Hill, N.C.
- Chandler, Arthur C., Jr. (1965), M.D. (Duke), *Associate Professor of Ophthalmology and Associate in the Department of Anatomy*, 6 Cotswald Place
- Charlesworth, James H. (1969), Ph.D. (Duke), *Associate Professor of Religion*, 4022 West Cornwallis Road
- Charlton, Oliver Patrick (1977), M.B. (Witwatersrand, Johannesburg), *Assistant Professor of Radiology*, 81 Beverly Drive
- Chen, James T. T. (1965), M.D. (National Defense Med. Center, Taiwan), *Professor of Radiology*, 2528 Sevier Street
- <sup>38</sup>Chesnut, Donald B. (1965), Ph.D. (California Inst. of Tech.), *Professor of Chemistry*, 4404 Malvern Road
- Cheung, Kwok-Sing (1974), Ph.D. (Saskatchewan), *Assistant Medical Research Professor of Pediatrics*, 3716 Suffolk Street
- Christakos, Arthur C. (1963), M.D. (South Carolina), *Professor of Obstetrics and Gynecology and Associate Professor of Community and Family Medicine*, 3102 Surry Road
- Christensen, Norman L., Jr. (1973), Ph.D. (California at Santa Barbara), *Assistant Professor of Botany*, 2909 Omah Street
- Christie, George C. (1967), S.J.D. (Harvard), *Professor of Law*, 17 Stoneridge Circle
- <sup>39</sup>Ciferri, Alberto (1977), Ph.D. (Rome, Italy), *Visiting Professor of Chemistry*, 412 Carolina Circle
- Ciampi, Giorgio (1964), M.A. (Paris Conservatory, France), *Artist-in-Residence in the Department of Music*, 3614 Westover Road
- Clapp, James R. (1963), M.D. (North Carolina at Chapel Hill), *Professor of Medicine*, 4030 King Charles Road
- Clark, Howard G., III (1968), Ph.D. (Maryland), *Professor of Biomedical Engineering and Materials Science*, Apartment 5, 2030 Bedford Street
- <sup>40</sup>Clark, William Mackey (1977), M.D. (Harvard), *Assistant Professor of Radiology*, Apartment 24-E, 2836 Chapel Hill Road
- Clark, William W., III (1976), Ph.D. (Duke), *Instructor and Research Associate in Physics*, 3818 Hillgrand Drive

<sup>37</sup>Leave of absence 1-1-78 through 12-31-78.

<sup>38</sup>Sabbatical leave, spring 1978-79.

<sup>39</sup>Through 12-31-77.

<sup>40</sup>Through 6-30-78.



- <sup>41</sup>Clarke, Edmund Melson, Jr. (1976), Ph.D. (Cornell), *Assistant Professor of Computer Science*, Apartment 22, 18 Balmoray Court
- Clausen, Joy Carol (1978), Ph.D. (Colorado), *Associate Professor of Nursing*, 510 Yorktown Drive
- <sup>42</sup>Cleaveland, Frederick N. (1971), Ph.D. (Princeton), *Professor of Political Science*, 1822 North Lakeshore Drive, Chapel Hill, N.C.
- <sup>43</sup>Cleeve, Damien Maxwell (1977), M.B. (Monash Univ., Victoria, Australia), *Associate in Radiology*, 4008 Hillgrande Drive
- <sup>44</sup>Cleveland, William Porter (1972), Ph.D. (Wisconsin), *Assistant Medical Research Professor of Community and Family Medicine*, 2020 Sunset Avenue
- Clifford, Edward (1965), Ph.D. (Minnesota), *Professor of Medical Psychology in the Department of Psychiatry and Professor of Medical Psychology in the Department of Surgery*, 2535 Sevier Street
- Clippinger, Frank W. (1957), M.D. (Washington Univ.), *Professor of Orthopaedic Surgery*, 3514 Rugby Road
- Clum, John M. (1966), Ph.D. (Princeton), *Associate Professor of English*, 4006 Inwood Drive
- Cobb, Frederick R. (1971), M.D. (Mississippi), *Associate Professor of Medicine and Associate in Physiology*, 3724 Suffolk Street
- Cocks, Franklin H. (1972), Sc.D. (Massachusetts Inst. of Tech.), *Professor of Materials Science*, 2960 Friendship Road
- Cohen, Harvey Jay (1971), M.D. (State Univ. of New York), *Associate Professor of Medicine*, 2811 Friendship Circle
- Cohen, Kalman J. (1974), Ph.D. (Carnegie-Mellon), *Distinguished Bank Research Professor of Business Administration*, 2312 Honeysuckle Court, Chapel Hill, N.C.
- Coie, John (1968), Ph.D. (California at Berkeley), *Associate Professor of Psychology*, 123 West Woodridge Drive
- Cole, T. Boyce (1969), M.D. (North Carolina at Chapel Hill), *Associate Professor of Otolaryngology*, 3808 Darwin Road
- Coleman, Rosalind (1978), M.D. (Case Western Reserve), *Assistant Professor of Pediatrics*, 2644 University Drive
- Collier, David Alan (1977), Ph.D. (Ohio State), *Assistant Professor of Business Administration*, 5109 Timmons Drive
- Collins, Jeffrey J. (1974), Ph.D. (Harvard), *Assistant Professor of Experimental Surgery and Assistant Professor of Microbiology and Immunology*, 306-A Estes Drive, Chapel Hill, N.C.
- <sup>45</sup>Colton, Joel G. (1947), Ph.D. (Columbia), *Professor of History*, 215 East 68th Street, #316, New York, N.Y.
- Colver, Robert Merle (1953), Ed.D. (Kansas), *Associate Professor of Education*, 2720 Circle Drive
- Conn, P. Michael (1978), Ph.D. (Baylor), *Assistant Professor of Pharmacology*, 609 Duluth Street
- <sup>46</sup>Connolly, John Leonard, Jr. (1974), Ph.D. (Pennsylvania), *Assistant Professor of Art*, 107 Pinecrest Road
- Conrad, Robert Franklin (1978), Ph.D. (Wisconsin), *Assistant Professor of Economics*, 1528 Hermitage Court
- Convery, Frank (1971), Ph.D. (State Univ. of New York), *Associate Professor of Forest Resource Economics*, 2315 Wilson Street
- Cook, Philip J. (1973), Ph.D. (California at Berkeley), *Assistant Professor of Policy Sciences and Economics*, 141 Stateside Drive, Chapel Hill, N.C.
- Cook, Wesley A., Jr. (1971), M.D. (Oregon), *Associate Professor of Neurosurgery*, Apartment 1, 1829 Front Street
- Cooper, Ralph L. (1977), Ph.D. (Rutgers), *Assistant Medical Research Professor of Medical Psychology in the Department of Psychiatry*, 3508 Racine Street
- Coppedge, Hallie M. (1966), M.S.W. (North Carolina at Chapel Hill), *Associate in Psychiatric Social Work*, 3435 Cromwell Road
- <sup>47</sup>Cordle, Thomas Howard (1950), Ph.D. (Yale), *Professor of Romance Languages*, 916 West Markham Avenue
- Corey, Gordon Ralph (1977), M.D. (Baylor), *Associate in the Department of Medicine*, 6 Pine Tree Lane, Route 2, Chapel Hill, N.C.
- Corless, Joseph M. (1972), Ph.D., M.D. (Duke), *Assistant Professor of Anatomy and Associate in Ophthalmology*, 1114 Iredell Street
- Corless, Roger J. (1970), Ph.D. (Wisconsin), *Associate Professor of Religion*, Apartment H, 1809 Erwin Road

<sup>41</sup> Through 8-31-78.

<sup>42</sup> Sabbatical leave, spring 1978-79, fall 1979-80.

<sup>43</sup> Through 6-30-78.

<sup>44</sup> Leave of absence 8-1-78 through 7-31-79.

<sup>45</sup> Leave of absence 9-1-74 through 8-31-79.

<sup>46</sup> Leave of absence 1978-79.

<sup>47</sup> Sabbatical leave, fall 1978-79.

- Corley, Ronald B. (1977), Ph.D. (Duke), *Assistant Medical Research Professor of Immunology*, Apartment W-4, 3033 Weymouth Street
- <sup>48</sup>Corrie, Bruce A. (1965), Ph.D. (Indiana), *Associate Professor of Physical Education*, 3223 Haddon Road
- Costanzo, Philip R. (1968), Ph.D. (Florida), *Associate Professor of Psychology*, 2741 Spencer Street
- Costello, Martin J. (1975), Ph.D. (Duke), *Assistant Professor of Anatomy*, 404 East Markham Avenue
- <sup>49</sup>Costlow, John D., Jr. (1959), Ph.D. (Duke), *Professor of Zoology*, 201 Ann Street, Beaufort, N.C.
- <sup>50</sup>Counce, Sheila J. (1968), Ph.D. (Edinburgh), *Professor of Anatomy*, 3101 Camelot Court
- Cox, Edwin B. (1975), M.D. (Duke), *Associate in the Department of Medicine*, 630 Starmont Drive
- Cox, Jimmy Lewis (1978), M.D. (Tennessee), *Assistant Professor of Surgery*, 3306 Pinafore Drive
- <sup>51</sup>Cox, Robert Calvin (1942), M.A. (Columbia), *Associate Professor of Physical Education*, 1913 University Drive
- Crapo, James D. (1976), M.D. (Rochester), *Assistant Professor of Medicine*, 5908 Marble Drive
- Crawford, Jeffrey (1978), M.D. (Ohio State), *Associate in the Department of Medicine*, 706 Overhill Terrace
- Creasman, William T. (1970), M.D. (Baylor), *Professor of Obstetrics and Gynecology*, 2944 Friendship Road
- Crellin, John Keith (1977), Ph.D. (London), *Associate Professor of Community and Family Medicine (Medical History) and Associate Professor of History*, 1521 Crestwood Lane, Chapel Hill, N.C.
- <sup>52</sup>Crenshaw, Marion Carlyle, Jr. (1964), M.D. (Duke), *E. C. Hamblen Professor of Family Planning and Reproductive Medicine and Associate Professor of Pediatrics*, 5501 Roxboro Road
- Cresswell, Peter (1973), Ph.D. (Univ. of London), *Associate Professor of Immunology in the Department of Microbiology and Immunology*, 2621 Augusta Drive
- Croker, Byron Pennington, Jr. (1977), M.D., Ph.D. (Duke), *Assistant Professor of Pathology*, 3015 Weymouth
- <sup>53</sup>Cromer, John A. (1975), Ph.D. (North Dakota), *Assistant Medical Research Professor of Anesthesiology*, 508 Rippling Stream Road
- Crovitz, Elaine K. (1964), Ph.D. (Duke), *Associate Professor of Medical Psychology in the Department of Psychiatry and Assistant Professor of Urology*, 2745 Montgomery Street
- Crovitz, Herbert F. (1963), Ph.D. (Duke), *Professor of Medical Psychology in the Department of Psychiatry and Lecturer in Psychology*, Apartment 27-H, 2752 Middleton Street
- Crumbliss, Alvin L. (1970), Ph.D. (Northwestern), *Associate Professor of Chemistry*, 2826 Stuart Drive
- Culberson, William L. (1955), Ph.D. (Wisconsin), *Professor of Botany*, Route 7, George King Road
- Currie, John Lauchlin (1978), M.D. (North Carolina at Chapel Hill), *Associate in the Department of Obstetrics and Gynecology*, 105 Porter Place, Chapel Hill, N.C.
- Currie, William D. (1967), Ph.D. (North Carolina at Chapel Hill), *Associate Professor of Radiology*, 3611 Randolph Road
- Curry, John F. (1978), Ph.D. (Catholic Univ. of America), *Associate in the Department of Psychiatry*, 205 Forestwood Drive
- <sup>54</sup>Cushman, Robert Earl (1945), B.D., Ph.D. (Yale), L.H.D., *Research Professor of Systematic Theology in the Divinity School*, Apartment J-6, 2800 Croasdaille Drive
- <sup>55</sup>Cusson, Ronald Yvon (1970), Ph.D. (California Inst. of Tech.), *Professor of Physics*, 241 Seminole Drive, Chapel Hill, N.C.
- Daffner, Richard H. (1976), M.D. (State Univ. of New York at Buffalo), *Associate Professor of Radiology*, 3442 Rugby Road
- Daniel, Myralin Grace (1978), M.S. (Maryland), *Assistant Professor of Nursing*, 813 Long Leaf Drive, Chapel Hill, N.C.
- <sup>56</sup>Daniels, Charles Andrew (1970), Ph.D. (Duke), *Associate Professor of Pathology*, 4 Sylvan Road
- Dattilo, JoEllen (1978), M.N. (Emory), *Instructor in Nursing*, Apartment 15-G, 200 Seven Oaks Road
- Davenport, Ollie Belle (1961), M.S.N. (Western Reserve), *Assistant Professor of Nursing*, 905 West Knox Street
- Davidson, Jonathan R. T. (1978), M.B. (University College, London), *Associate Professor of Psychiatry*, Apartment 203-F, 500 Umstead Drive, Chapel Hill, N.C.
- Davies, David George (1961), Ph.D. (California at Los Angeles), *Professor of Economics*, 2631 McDowell Road
- <sup>57</sup>Davies, William David (1966), D.D. (Wales), F.B.A., *George Washington Ivey Professor of Advanced Studies in New Testament and Research in Christian Origins in the Divinity School*, 228 Monticello Avenue
- Davis, Calvin D. (1962), Ph.D. (Indiana), *Professor of History*, 907 Monmouth Avenue

<sup>48</sup>Through 8-31-78.

<sup>49</sup>Sabbatical leave, fall 1978-79.

<sup>50</sup>Sabbatical leave, fall 1978-79.

<sup>51</sup>Retired 2-28-78; deceased 11-25-78.

<sup>52</sup>Sabbatical leave 10-1-78 through 3-31-79.

<sup>53</sup>Through 12-31-77.

<sup>54</sup>Sabbatical leave, spring 1978-79.

<sup>55</sup>Sabbatical leave, fall 1978-79.

<sup>56</sup>Sabbatical leave 1978-79.

<sup>57</sup>Sabbatical leave, fall 1978-79 and leave of absence, spring 1978-79.

- Davis, David A. (1971), M.D. (Vanderbilt), *Professor of Anesthesiology*, Kings Mill Road, Chapel Hill, N.C.
- Davis, James Norman (1972), M.D. (Cornell), *Associate Professor of Medicine (Neurology) and Associate Professor of Pharmacology*, 3509 Suffolk Street
- Davis, Lucy Tolbert (1969), Ed.D. (Columbia), *Associate Professor of Education and Clinical Associate in Therapeutic Education in the Department of Psychiatry*, 705 Gimghoul Road, Chapel Hill, N.C.
- <sup>58</sup>Davis, Walter Etchells (1972), M.D. (Duke), *Assistant Professor of Medicine*, 3815 Saint Marks Road
- Dawson, Jeffrey Robert (1972), Ph.D. (Case Western Reserve), *Assistant Professor of Immunology in the Department of Microbiology and Immunology*, 902 Clarion Drive
- Day, Eugene Davis (1962), Ph.D. (Delaware), *Professor of Immunology and Professor of Experimental Surgery*, 2727 McDowell Road
- Day, John Warren (1978), Ph.D. (Iowa State), *Assistant Medical Research Professor of Urology in the Department of Surgery*, 1617 Stacy Drive
- Day, Ruth S. (1978), Ph.D. (Stanford), *Associate Professor of Psychology*, 4217 Trotter Ridge Road
- Dearlove, Judith Elizabeth (1976), Ph.D. (Virginia), *Assistant Professor of English*, 1104 Englewood Avenue
- Debski, Alberta M. (1978), M.S.N. (North Carolina at Chapel Hill), *Clinical Instructor in Nursing*, 811 Long Leaf Drive, Chapel Hill, N.C.
- Decker, Peter R. (1975), Ph.D. (Columbia), *Assistant Professor of Policy Sciences and History*, 1607 Hermitage Court
- Dees, John Essary (1939), M.D. (Virginia), *Professor of Urology*, 413 Carolina Circle
- Dees, Susan Coons (1939), M.D. (Johns Hopkins), *Professor of Pediatrics*, 413 Carolina Circle
- Delaney, Thomas Jeremiah (1974), M.S. (Naval Postgraduate School), *Assistant Professor of Health Administration*, 1602 Stacy Drive
- De La Torre, Christina S. (1977), M.D. (Buenos Aires State Univ.), *Clinical Associate in the Department of Community and Family Medicine*, 2523 Wilson Street
- Delay, Richard D. (1978), M.S. (Pennsylvania State), *Visiting Assistant Professor of Aerospace Studies*, 2803 Fox Drive
- Dellinger, David C. (1968), Ph.D. (Stanford), *Associate Professor of Business Administration*, 19 Heath Place
- <sup>59</sup>Dellinger, Walter Estes, III (1969), LL.B. (Yale), *Professor of Law*, 513 Franklin Street, Chapel Hill, N.C.
- <sup>60</sup>De Lucia, Frank Charles (1969), Ph.D. (Duke), *Associate Professor of Physics*, 4335 Sterling Drive
- <sup>61</sup>deMarchi, Neil Barry (1971), Ph.D. (Australian National Univ.), *Associate Professor of Economics*, 2437 Sedgfield Drive, Chapel Hill, N.C.
- DeMott, Deborah A. (1975), J.D. (New York Univ.), *Associate Professor of Law*, 1708 Curtis Road, Chapel Hill, N.C.
- DeNeef, A. Leigh (1969), Ph.D. (Pennsylvania State), *Associate Professor of English*, 1623 Park Drive, Raleigh, N.C.
- Dennis, Vincent William (1973), M.D. (Georgetown), *Associate Professor of Medicine and Associate in the Department of Physiology*, 2510 Tryon Road
- Dent, Sara Jamison (1955), M.D. (South Carolina), *Professor of Anesthesiology*, Route 4, Box 526, Hillsborough, N.C.
- DeRemer, Paula (1978), Ph.D. (Purdue), *Assistant Professor of Medical Psychology in the Department of Psychiatry and Associate in the Department of Pediatrics*, Apartment 17-D, 3022 Chapel Hill Road
- Dery, Gretchen J. (1969), M.S. (Catholic Univ.), *Assistant Professor of Nursing*, 1329 Clermont Drive
- Diamond, Irving T. (1958), Ph.D. (Chicago), *James B. Duke Professor of Psychology, Professor of Physiology, and Lecturer in Anatomy*, Route 1, Box 75
- Di Bona, Joseph (1967), Ph.D. (California at Berkeley), *Associate Professor of Education*, Route 1, Box 306, Timberlake, N.C.
- <sup>62</sup>DiCarlo, Elizabeth Michelle (1977), M.P.H. (North Carolina at Chapel Hill), *Associate in Community and Family Medicine*, 106 North Estes Drive, Chapel Hill, N.C.
- Dickens, Robert L. (1949), M.S. (North Carolina at Chapel Hill), C.P.A., LL.D., *Professor of Accounting in the Department of Management Sciences*, 2717 Circle Drive
- <sup>63</sup>di Corcia, Joseph (1975), Ph.D. (Duke), *Assistant Professor of History*, Apartment K-3-B, 1500 Duke University Road
- Diehl, Kenneth Robert (1972), D.M.D. (Harvard), *Assistant Clinical Professor of Orthodontics in the Department of Surgery*, 2961 Welcome Drive
- Dilley, William G. (1976), Ph.D. (California at Berkeley), *Assistant Professor of Experimental Surgery*, 2507 Foxwood, Chapel Hill, N.C.

<sup>58</sup>Through 12-31-77.

<sup>59</sup>Sabbatical leave, spring 1978-79.

<sup>60</sup>Leave of absence, 1978-79.

<sup>61</sup>Sabbatical leave, spring 1978-79.

<sup>62</sup>Through 7-31-78.

<sup>63</sup>Leave of absence, spring 1978-79.



- <sup>64</sup>Dirlik, Arif (1971), Ph.D. (Rochester), *Associate Professor of History*, 2101 Strebor Road  
Dittman, David A. (1978), Ph.D. (Ohio State), *Associate Professor of Business Administration*, 3510  
Sheridan Road
- <sup>65</sup>Doiron, Theodore Danos (1977), Ph.D. (Duke), *Instructor and Research Associate in Physics*, Apartment  
12-J, 2836 Chapel Hill Road  
Dorr, Darwin A. (1975), Ph.D. (Florida State), *Associate Professor of Medical Psychology in the Department of  
Psychiatry*, 54 Briarwood Road, Asheville, N.C.  
Doss, George W. (1976), M.D. (Texas), *Clinical Associate in the Department of Psychiatry*, 510 Windsor  
Road, Asheville, N.C.  
Douglass, Fenner (1974), M.Mus. (Oberlin Coll.), *Professor of Music*, 710-C Constitution Drive  
Drezner, Marc K. (1975), M.D. (Pittsburgh), *Assistant Professor of Medicine*, 4629 Pinedale Drive  
DuBois, Philip J. (1978), M.B. (Queensland, Australia), *Assistant Professor of Radiology*, 901 Kings Mill  
Road, Chapel Hill, N.C.  
Duffey, Bernard I. (1963), Ph.D. (Ohio State), *Professor of English*, 2732 Dogwood Road  
Duke, Kenneth Lindsay (1940), Ph.D. (Duke), *Associate Professor of Anatomy*, 2736 McDowell Road  
Duncan, James L. (1978), B.S. (Auburn), *Visiting Assistant Professor of Naval Science*, Apartment 75-C,  
2920 Chapel Hill Road  
Dunlap, Connie Robson (1975), A.M.L.S. (Michigan), *Professor in the Faculty of Arts and Sciences*, 2915  
Friendship Road  
Durack, David Tulloch (1977), M.B. (West Australia), *Associate Professor of Medicine and Associate  
Professor of Microbiology and Immunology*, 1700 Woodstock Road
- <sup>66</sup>Duran, Walter N. (1974), Ph.D. (Catholic Univ., Chile), *Assistant Medical Research Professor of Physiology  
and Assistant Medical Research Professor of Experimental Surgery*, Apartment 13-F, 3301 Shannon Road  
Durden, Robert F. (1952), Ph.D. (Princeton), *Professor of History*, 2532 Wrightwood Avenue  
Dutton, John A. (1975), M.S. (Ohio State), *Professor of Aerospace Studies*, 3700 Sandy Ridge Lane  
Dvorak, George Jiri (1967), Ph.D. (Brown), *Professor of Civil Engineering and Professor of Biomedical  
Engineering*, 2956 Friendship Road  
Dyer, Allen R. (1976), M.D. (Duke), *Assistant Professor of Psychiatry and Assistant Professor of Community and  
Family Medicine*, 930 West Markham Avenue  
Eaker, Mark R. (1977), Ph.D. (Stanford), *Assistant Professor of Business Administration*, 1214 West  
Cornwallis Road
- <sup>67</sup>Easley, Ronald B. (1975), M.D., Ph.D. (Oklahoma), *Assistant Professor of Medicine*, Route 2, Box 405-  
A  
Eckle, Elaine Martha (1971), M.A. (North Carolina at Chapel Hill), *Assistant Clinical Professor of Physical  
Therapy*, 309 Lindsay Street, Carrboro, N.C.  
Eckerman, Carol O. (1972), Ph.D. (Columbia), *Assistant Professor of Psychology*, 301 Hoot Owl Lane,  
Chapel Hill, N.C.
- <sup>68</sup>Eddy, Ruth Buchanan (1952), M.S. (Smith), *Associate Professor of Physical Education*, 702 Louise Circle  
Edwards, Herbert O., Sr. (1974), Ph.D. (Brown), *Associate Professor of Black Church Studies in the Divinity  
School*, 2733 Sevier Street  
Edwards, Sam B. (1974), M.D. (Duke), *Assistant Professor of Pediatrics*, Apartment 89, Flint Ridge,  
Hillsborough, N.C.  
Effmann, Eric Leonard (1977), M.D. (Indiana), *Associate Professor of Radiology and Assistant Professor of  
Anatomy*, 1512 Arboretum Drive, Chapel Hill, N.C.  
Efird, James Michael (1962), Ph.D. (Duke), *Associate Professor of Biblical Languages and Interpretations in the  
Divinity School*, 2609 Heather Glen Road  
Elchlepp, Jane G. (1960), Ph.D. (Chicago), M.D. (Iowa), *Associate Professor of Pathology*, Route 1, Box  
77, Cornwallis Road  
Eldridge, Albert F. (1970), Ph.D. (Kentucky), *Associate Professor of Political Science*, 807 Onslow Street  
Ellinwood, Everett H., Jr. (1966), M.D. (North Carolina at Chapel Hill), *Professor of Psychiatry and  
Assistant Professor of Pharmacology*, 3519 Tonbridge Way  
Ellis, George John, III (1970), M.D. (Harvard), *Associate Professor of Medicine*, 2743 Sevier Street  
Elliston, E. Bruce (1978), M.D. (Loma Linda Univ. Med. Ctr.), *Clinical Associate in the Department of  
Community and Family Medicine and Clinical Associate in the Department of Psychiatry*, 200 Bent Tree Road,  
Asheville, N.C.  
Elsevier, Ernest (1950), M.S.M.E. (Georgia Inst. of Tech.), *Associate Professor of Mechanical Engineering*,  
2412 Wrightwood Avenue  
Endow, Sharyn Anne (1978), Ph.D. (Yale), *Assistant Professor in the Department of Microbiology and  
Immunology*, 112 West Markham Avenue  
English, Peter Calvin (1978), Ph.D., M.D. (Duke), *Assistant Professor of Pediatrics and Assistant Professor of  
History*, 3309 Avon Road

<sup>64</sup>Leave of absence 1978-79.

<sup>65</sup>Through 8-31-78.

<sup>66</sup>Through 12-31-77.

<sup>67</sup>Through 12-31-77.

<sup>68</sup>Sabbatical leave, spring 1978-79.



- Erickson, Carl (1966), Ph.D. (Rutgers), *Professor of Psychology*, 106 Newell Street
- Erickson, Harold P. (1970), Ph.D. (Johns Hopkins), *Associate Professor of Anatomy*, 1108 Minerva Avenue
- Erickson, Robert P. (1961), Ph.D. (Brown), *Professor of Psychology and Associate Professor of Physiology*, 238-C Terry Road, Route 1, Hillsborough, N.C.
- Erwin, Charles William (1969), M.D. (Texas), *Associate Professor of Psychiatry*, 15 Scott Place
- Espejo, Jose A. (1975), Ph.D. (Columbia), *Assistant Professor of Business Administration*, 1800 Lake Park Drive, Raleigh, N.C.
- Estes, E. Harvey, Jr. (1953), M.D. (Emory), *Professor of Community and Family Medicine and Professor of Medicine*, 3542 Hamstead Court
- Evans, Evan Allen (1973), Ph.D. (California at San Diego), *Associate Professor of Biomedical Engineering and Assistant Professor of Physiology*, Route 1, Box 184-V2, Hillsborough, N.C.
- Evans, Lawrence E. (1963), Ph.D. (Johns Hopkins), *Associate Professor of Physics*, 1020 Demerius Street
- Everett, Robinson Oscar (1956), LL.M. (Duke), *Professor of Law*, 601-A LaSalle Street
- <sup>69</sup>Evers, Mark (1973), Ph.D. (Michigan), *Assistant Professor of Sociology*, 145 Windsor Circle Chapel Hill, N.C.
- Fagraeus, Lennart (1974-75; 1978), M.D., Ph.D. (Karolinska Institutet, Sweden), *Assistant Professor of Anesthesiology*, 608 Churchill Drive, Chapel Hill, N.C.
- Fairbank, Henry A. (1962), Ph.D. (Yale), *Professor of Physics*, 1515 Pinecrest Road
- Falcone, Carmen M. (1946), M.A. (Ohio State), *Professor of Physical Education*, 1402 Woodburn Road
- Falcone, David J. (1975), Ph.D. (Duke), *Assistant Professor of Health Administration and Assistant Professor of Political Science*, Apartment 79-E, 2112 Broad Street
- Falletta, John M. (1976), M.D. (Kansas), *Associate Professor of Pediatrics*, 803 Cedar Falls Road, Chapel Hill, N.C.
- Farmer, Joseph C., Jr. (1971), M.D. (Duke), *Associate Professor of Otolaryngology*, 3020 Harriman Avenue
- Farris, Donn Michael (1959), M.Div. (Duke), *Professor of Theological Bibliography in the Divinity School*, 921 Buchanan Boulevard
- Fay, Joseph Wayne (1977), M.D. (Ohio State), *Associate in the Department of Medicine*, 5616 Falkirk Drive
- Fein, John Morton (1950), Ph.D. (Harvard), *Professor of Romance Languages*, 2726 Montgomery Street
- Feinglos, Mark N. (1978), M.D. (McGill), *Associate in the Department of Medicine*, 20 Scott Place
- Feldman, Jerome M. (1968), M.D. (Northwestern), *Associate Professor of Medicine*, 2744 Sevier Street
- <sup>70</sup>Fenoaltea, Stefano (1977), Ph.D. (Harvard), *Associate Professor of Economics*, Apartment D-2, 1336 Newcastle Road
- Ferguson, Arthur Bowles (1939), Ph.D. (Cornell), *Professor of History*, 22 Lebanon Circle
- Ferguson, Oliver W. (1957), Ph.D. (Illinois), *Professor of English*, 1212 Arnette Avenue
- Ferry, Seneca Taylor, II (1978), M.D. (Missouri), *Assistant Professor of Community and Family Medicine*, P.O. Box 8, Smyrna, N.C.
- Fetter, Bernard F. (1951), M.D. (Duke), *Professor of Pathology*, 3836 Somerset Drive
- Feussner, John R. (1976), M.D. (Vermont), *Associate in Medicine*, Apartment 3, 207 Pinegate Circle, Chapel Hill, N.C.
- Filston, Howard C. (1976), M.D. (Western Reserve), *Associate Professor of Pediatric Surgery and Associate Professor of Pediatrics*, 3618 Stoneybrook Drive
- <sup>71</sup>Finkin, Matthew W. (1978), LL.M. (Yale), *Visiting Associate Professor of Law*, 115 Law School
- Finn, Andrew L. (1978), Ph.D. (Michigan), *Assistant Clinical Professor of Community and Family Medicine*, 2028 Pershing Street
- <sup>72</sup>Fischer, Gregory Warren (1973), Ph.D. (Michigan), *Assistant Professor of Policy Sciences and Psychology*, 1300 Oakland Avenue
- <sup>73</sup>Fish, Peter Graham (1969), Ph.D. (Johns Hopkins), *Associate Professor of Political Science*, 1006 Urban Avenue
- Fishburn, Robert Irl (1976), M.D. (California at Irvine), *Assistant Professor of Radiology*, 2420 Alpine Road
- Fjeld, Jon (1977), Ph.D. (Toronto), *Assistant Professor of Philosophy*, Apartment 24-E, 2752 Middleton Street
- <sup>74</sup>Flath, Daniel Evans (1977), Ph.D. (Harvard), *Assistant Professor of Mathematics*, 134 Physics
- <sup>75</sup>Fleishman, Joel L. (1971), LL.M. (Yale), *Professor of Law*, 205 Wood Circle, Chapel Hill, N.C.
- <sup>76</sup>Flowers, Anne (1972), Ed.D. (Duke), *Professor of Education*, 9 Glenmore Drive

<sup>69</sup>Through 8-31-78.

<sup>70</sup>Leave of absence, fall 1978-79.

<sup>71</sup>Through 5-31-78.

<sup>72</sup>Through 8-31-78.

<sup>73</sup>Leave of absence 1978-79.

<sup>74</sup>Leave of absence 1978-79.

<sup>75</sup>Sabbatical leave 1-1-78 through 12-31-78.

<sup>76</sup>Sabbatical leave, spring 1978-79.

- Flowers, Maxine Rogers (1971), M.S. (Columbia), *Associate in Psychiatric Social Work*, 128 Pinecrest Road
- Floyd, Walter L. (1959), M.D. (Johns Hopkins), *Professor of Medicine*, 3556 Hamstead Court
- Fluke, Donald J. (1958), Ph.D. (Yale), *Professor of Zoology*, 2703 Sevier Street
- <sup>77</sup>Fornell, Claes Goran Arne (1977), Ph.D. (Lund), *Visiting Assistant Professor of Management Sciences in the Graduate School of Business Administration*, 1909 Rolling Road, Chapel Hill, N.C.
- <sup>78</sup>Forsyth, John D. (1978), D.B.A. (Illinois), *Professor of Business Administration*, 304 Highview Drive, Chapel Hill, N.C.
- Fortney, Lloyd R. (1964), Ph.D. (Wisconsin), *Associate Professor of Physics*, 2 Scott Place
- Forward, Richard B., Jr. (1971), Ph.D. (California at Santa Barbara), *Associate Professor of Zoology*, 414 Ann Street, Beaufort, N.C.
- Foscue, Henry A., Jr. (1977), M.D. (Duke), *Associate in the Department of Medicine*, 48 Glenmore Drive
- Foster, William Leicester, Jr. (1978), M.D. (Duke), *Assistant Professor of Radiology*, Box 159-A, Route 6, Farrington Road, Chapel Hill, N.C.
- Foulks, Gary Neal (1978), M.D. (Columbia Coll.), *Assistant Professor of Ophthalmology*, 5614 Woodbury Road
- <sup>79</sup>Fouts, Anthony C. (1978), M.D. (Duke), *Associate in the Department of Medicine*, 1441 Colewood Drive
- Fowler, John Alvis (1953), M.D. (Bowman Gray), *Professor of Psychiatry and Lecturer in Education*, 2721 Spencer Street
- <sup>80</sup>Fowlie, Wallace (1964), Ph.D. (Harvard), *James B. Duke Professor of Romance Languages*, Apartment 17-D, 2820 Chapel Hill Road
- Fox, Elisabeth June (1977), M.B. (London), *Associate Professor of Anesthesiology*, 901 Greenwood Road, Chapel Hill, N.C.
- Fox, Glynn H. (1977), M.S.W. (Louisiana State), *Clinical Associate in Psychiatric Social Work in the Department of Psychiatry*, 417 Carolina Circle
- Fox, Judith Huff (1977), Ph.D. (Duke), *Assistant Professor of Sociology in the School of Nursing and Assistant Professor of Sociology*, 1601 Kent Street
- Fox, Richard G. (1968), Ph.D. (Michigan), *Professor of Anthropology*, 1601 Kent Street
- France, Randal Dennis (1978), M.D. (Texas), *Associate in the Department of Psychiatry and Associate in the Department of Community and Family Medicine*, Route 1, Box 200
- <sup>81</sup>Fraser, David J. (1978), Master of Commerce (New South Wales, Australia), *Visiting Associate Professor of Management Sciences in the Graduate School of Business Administration*, Apartment 36-B, 2920 Chapel Hill Road
- Fridovich, Irwin (1958), Ph.D. (Duke), *James B. Duke Professor of Biochemistry*, 3517 Courtland Drive
- Friedl, Ernestine (1973), Ph.D. (Columbia), *Professor of Anthropology*, Apartment D, 3080 Colony Road
- Friedman, Stephen William (1977), M.D. (Tulane), *Clinical Associate in the Department of Community and Family Medicine*, 912 Monmouth Avenue
- Friedrich, John A. (1963), Ph.D. (Michigan State), *Professor of Physical Education*, 2953 Welcome Drive
- Frothingham, Thomas Eliot (1973), M.D. (Harvard), *Professor of Pediatrics and Professor of Community and Family Medicine*, 2604 McDowell Road
- Fuchs, James C. A. (1974), M.D. (Johns Hopkins), *Burroughs Wellcome Associate Professor of Surgery and Burroughs Wellcome Assistant Professor of Pharmacology*, 3920 Dover Road
- Fulkerson, Conrad C. (1974), M.D. (Missouri), *Associate in the Department of Medicine*, 2712 Legion Avenue
- Furbish, William J. (1954), M.S. (Wisconsin), *Associate Professor of Geology*, Route 2, Box 31, Hillsborough, N.C.
- Gaede, Jane T. (1974), M.D. (Duke), *Assistant Professor of Pathology*, P.O. Box 747, Hillsborough, N.C.
- Gall, Stanley Adolph (1973), M.D. (Minnesota), *Professor of Obstetrics and Gynecology*, 3902 Saint Marks Road
- Gallagher, John J. (1974), M.D. (Georgetown), *Associate Professor of Medicine*, 401 Lakeshore Lane, Chapel Hill, N.C.
- <sup>82</sup>Gallemore, Johnnie L., Jr. (1969), M.D. (Emory), J.D. (Duke), *Associate Professor of Psychiatry*, 2945 Friendship Road
- Gallie, Thomas Muir, Jr. (1954-55, 1956), Ph.D. (Rice), *Professor of Computer Science*, 21 Glenmore Drive
- Gallis, Harry A. (1973), M.D. (Duke), *Assistant Professor of Medicine and Associate in the Department of Microbiology and Immunology*, Route 2, Chesidy Circle, Chapel Hill, N.C.
- Gann, Pamela (1975), J.D. (Duke), *Associate Professor of Law*, 3518 Mayfair Road

<sup>77</sup>Through 6-30-78.

<sup>78</sup>Leave of Absence, spring 1977-78.

<sup>79</sup>Through 6-30-78.

<sup>80</sup>Retired 8-31-78.

<sup>81</sup>Through 5-31-78.

<sup>82</sup>Through 9-1-78.

- Ganz, Edward (1978), M.D. (Chicago), *Assistant Professor of Neurosurgery in the Department of Surgery*, 2800 Croasdaile Drive
- Garbutt, John Tener (1969), M.D. (Temple), *Associate Professor of Medicine*, 3836 Churchill Circle
- Garci-Gómez, Miguel (1973), Ph.D. (Catholic Univ.), *Associate Professor of Romance Languages*, 1108 Stonehedge Avenue
- <sup>83</sup>Garg, Devendra P. (1972), Ph.D. (New York Univ.), *Professor of Mechanical Engineering*, 2815 DeKalb Street
- Gasswint, Charles David (1972), Ph.D. (1972), *Clinical Associate in Medical Psychology in the Department of Psychiatry and Lecturer (part-time) in Psychology*, 3603 Mossdale Avenue
- <sup>84</sup>Gavins, Raymond (1970), Ph.D. (Virginia), *Associate Professor of History*, 20-28 Flint Ridge Apartments, Hillsborough, N.C.
- <sup>85</sup>Gebel, Peter (1973), M.D. (Harvard), *Assistant Professor of Medicine*, 2905 Friendship Road
- Gehlbach, Stephen H. (1976), M.D. (Case Western Reserve), *Assistant Professor of Community and Family Medicine (Epidemiology) and Associate in Pediatrics*, 526 Dogwood Drive, Chapel Hill, N.C.
- <sup>86</sup>Gehman, Ila H. (1959), Ed.D. (Pennsylvania State), *Associate Professor of Medical Psychology in the Department of Psychiatry, Lecturer in Psychology, and Lecturer in Education*, 2703 Spencer Street
- <sup>87</sup>Gehman, W. Scott, Jr. (1954), Ph.D. (Pennsylvania State), *Professor of Psychology in Education*, 2703 Spencer Street
- Gehweiler, John A., Jr. (1967), M.D. (Duke), *Associate Professor of Radiology*, 3551 Hamstead Court
- <sup>88</sup>Gelein, Janet Gay (1970), M.S. (Duke), *Assistant Professor of Nursing*, Route 7, Box 269-A
- <sup>89</sup>Gentry, William Doyle (1969), Ph.D. (Florida State), *Professor of Medical Psychology in the Department of Psychiatry, Associate Professor of Medical Psychology in Orthopaedic Surgery and Lecturer in Psychology*, 212 Brock Lane
- <sup>90</sup>George, Edward Richard (1977), M.D. (Miami), *Associate in the Department of Medicine*, 514 Duluth Street
- George, Linda K. (1977), Ph.D. (Duke), *Assistant Professor of Medical Sociology in the Department of Psychiatry and Associate in Physical Therapy*, Route 3, Box 292
- George, Rhett Truesdale, Jr. (1957), Ph.D. (Florida), *Assistant Professor of Electrical Engineering*, Route 4, Box 431, Hillsborough, N.C.
- Georgiade, Nicholas G. (1951), D.D.S., M.D. (Duke), *Professor of Plastic, Maxillofacial, and Oral Surgery*, 2523 Wrightwood Avenue
- Gerber, Gerald E. (1962), Ph.D. (Northwestern), *Associate Professor of English*, 3115 Stanford Drive
- Gianturco, Daniel T. (1966), M.D. (Buffalo), *Professor of Psychiatry and Assistant Professor of Community and Family Medicine*, 2925 Friendship Road
- Gifford, James F., Jr. (1977), Ph.D. (Duke), *Associate Professor of Community and Family Medicine (Medical History)*, 321 Riverdale Drive
- Gilbert, David Branson (1972), M.D. (Colorado), *Assistant Clinical Professor of Medicine*, 3212 Pinafore Drive
- Gilgore, Robert S. (1969), M.D. (Pennsylvania), *Assistant Professor of Medicine (Dermatology)*, 811 Kenmore Road, Chapel Hill, N.C.
- Gillespie, Hal G. (1971), M.D. (Med. Coll. of South Carolina), *Assistant Clinical Professor of Psychiatry*, 160 Patton Mountain Road, Asheville, N.C.
- Gillham, Nicholas W. (1968), Ph.D. (Harvard), *Professor of Zoology*, 1211 Woodburn Road
- <sup>91</sup>Ginsburg, Paul B. (1976), Ph.D. (Harvard), *Associate Professor of Policy Sciences and Associate Professor of Community and Family Medicine*, 112 Hunterhill Road, Chapel Hill, N.C.
- Giron, Louis Tellez, Jr. (1977), M.D. (Washington Univ.), *Associate in the Department of Medicine*, 3708 Suffolk Street
- Glander, Kenneth E. (1975), Ph.D. (Chicago), *Assistant Professor of Anthropology*, 1223 Vickers Avenue
- Glasgow, Lowrie R. (1978), M.D. (Virginia), *Associate in the Department of Medicine*, 2213 Prince Street
- Gleckner, Robert Francis (1978), Ph.D. (Johns Hopkins), *Professor of English*, Route 6, Box 353, Raleigh, N.C.
- Glenn, James F. (1963), M.D. (Duke), *Professor of Urology*, 27 Oak Drive
- Goffen, Rona (1978), Ph.D. (Columbia), *Assistant Professor of Art*, 1607 Sycamore Street
- Golding, Martin P. (1976), Ph.D. (Columbia), *Professor of Philosophy*, 3011 Buckingham Road
- Goldner, Joseph Leonard (1950), M.D. (Nebraska), *Professor of Orthopaedic Surgery*, 602 East Forest Hills Boulevard

<sup>83</sup>Sabbatical leave, fall 1978-79

<sup>84</sup>Sabbatical leave 1978-79.

<sup>85</sup>Through 12-31-77.

<sup>86</sup>Retired 6-30-78.

<sup>87</sup>Sabbatical leave, spring 1978-79.

<sup>88</sup>Sabbatical leave 6-1-78 through 5-31-79.

<sup>89</sup>Leave of absence 9-1-78 through 5-31-79.

<sup>90</sup>Through 6-30-78.

<sup>91</sup>Leave of absence 1978-79.



- <sup>92</sup>Goldsmith, Lowell A. (1973), M.D. (Downstate Med. Center, New York), *Professor of Medicine (Dermatology)*, 2932 Welcome Drive
- Gollberg, Harold R. (1972), M.D. (Texas), *Associate in Psychiatry*, 73 West Kensington, Asheville, N.C.
- Gooding, Linda R. (1974), Ph.D. (Cornell), *Assistant Professor of Immunology*, 4007 Hillgrand Drive
- Goodling, Richard A. (1959), Ph.D. (Pennsylvania State), *Professor of Pastoral Psychology in the Divinity School*, Route 7, Box 308, Farrington Road
- Goodrich, Jack K. (1965), M.D. (Tennessee), *Professor of Radiology*, 2940 Welcome Drive
- Goodwin, Craufurd D. (1962), Ph.D. (Duke), *James B. Duke Professor of Economics*, Box 957, Saint Mary's Road, Hillsborough, N.C.
- Goodwyn, Lawrence C. (1971), Ph.D. (Texas), *Associate Professor of History and Senior Research Associate in the Center for Southern Studies*, 2906 Welcome Drive
- Gordy, Walter (1946), Ph.D. (North Carolina at Chapel Hill), LL.D., *James B. Duke Professor of Physics*, 2521 Perkins Road
- Goree, John A. (1959), M.D. (Duke), *Professor of Radiology*, Route 7, Box 223A
- Goshaw, Alfred Thomas (1973), Ph.D. (Wisconsin), *Associate Professor of Physics*, Hills of New Hope, R.R. 2, Chapel Hill, N.C.
- Grabowski, Henry G. (1972), Ph.D. (Princeton), *Professor of Economics*, 2423 Rosewood Court, Chapel Hill, N.C.
- Graedon, Teresa (1975), Ph.D. (Michigan), *Assistant Professor of Nursing and Adjunct Assistant Professor of Anthropology*, 215 Pineview Road
- Graff, Jon Charles (1977), Ph.D. (Maryland), *Medical Research Associate in the Department of Microbiology and Immunology*, 2704 Stuart Drive
- Graham, Daniel A. (1969), Ph.D. (Duke), *Professor of Economics*, Apartment 4-G, 632 LaSalle Street
- Graham, Doyle Gene (1970), Ph.D. (Duke), *Associate Clinical Professor of Pathology*, 816 Watts Street
- Grandis, Arnold Stephen (1978), Ph.D., M.D. (Duke), *Assistant Professor of Obstetrics and Gynecology*, 3414 Angus Road
- Grant, John Palmer (1978), M.D. (Chicago), *Assistant Professor of Surgery*, 3314 Waterbury Drive
- Gratz, Pauline (1969), Ed.D. (Columbia), *Professor of Human Ecology in Nursing*, 220 Dacian Avenue
- Gray, Roberta Skinner (1977), M.D. (North Carolina at Chapel Hill), *Associate in the Department of Pediatrics*, 3000-B Sparger Road
- Green, Robert Lee, Jr. (1960), M.D. (Hahnemann), *Professor of Psychiatry*, 2300 Whitley Drive
- Green, Robert W. (1973), Ph.D. (Hawaii), *Associate in Experimental Surgery*, 1610 Sycamore Street
- Greene, Martha Ann (1977), M.S.N. (Duke), *Assistant Professor of Nursing*, Apartment 38-F, 3311 Shannon Road
- Greene, Ronald C. (1958), Ph.D. (California Inst. of Tech.), *Associate Professor of Biochemistry*, 1014 Norwood Avenue
- Greenfield, Joseph C., Jr. (1962), M.D. (Emory), *Professor of Medicine and Associate Professor of Physiology*, 1212 Virginia Avenue
- Greenleaf, Arno L. (1977), Ph.D. (Harvard), *Assistant Professor of Biochemistry*, 11 Ashley Road
- Gregg, John R. (1957), Ph.D. (Princeton), *Professor of Zoology*, 3702 Randolph Road
- Gregg, Robert Clark (1974), Ph.D. (Pennsylvania), *Associate Professor of Patristics and Medieval Church History in the Divinity School*, 218 Vance Street, Chapel Hill, N.C.
- Groce, M. Ann (1977), M.D. (North Carolina at Chapel Hill), *Assistant Professor of Anesthesiology*, 3817 Hillgrand Avenue
- Grosch, Kay L. (1975), M.S. (Ohio State), *Assistant Professor of Nursing*, 2745 McDowell Road
- Grosch, William Neil (1974), M.D. (Albany), *Assistant Professor of Psychiatry*, 2745 McDowell Road
- Gross, Samson R. (1960), Ph.D. (Columbia), *Professor of Genetics and Biochemistry*, 2411 Prince Street
- Gross, Steven J. (1977), M.D. (Maryland), *Assistant Professor of Pediatrics*, 103 Walden Place, Chapel Hill, N.C.
- Grossman, Herman (1971), M.D. (Columbia), *Professor of Radiology and Professor of Pediatrics*, 405 Lakeshore Lane, Chapel Hill, N.C.
- Grufferman, Seymour (1976), M.D. (State Univ. of New York), *Assistant Professor of Pediatrics*, Apartment 24, 2330 Hilton Avenue
- Grzybowski, Kazimierz (1971), S.J.D. (Harvard), *Professor of Political Science and Part-time Professor in the School of Law*, 2605 University Drive
- Guild, Walter Rufus (1960), Ph.D. (Yale), *Professor of Biophysics*, 2625 McDowell Road
- Gunnells, J. Caulie (1962), M.D. (South Carolina), *Professor of Medicine*, 3317 Devon Road
- Gutknecht, John W. (1969), Ph.D. (North Carolina at Chapel Hill), *Associate Professor of Physiology*, 123 Crescent Drive, Beaufort, N.C.
- <sup>93</sup>Gutknecht, William Frederick (1971), Ph.D. (Purdue), *Assistant Professor of Chemistry*, 2631 Tanglewood Drive
- Gutman, Laura E. T. (1972), M.D. (Stanford), *Associate Professor of Pediatrics and Assistant Professor of Pharmacology*, 2403 Wrightwood Avenue

<sup>92</sup>Leave of absence 7-1-78 through 6-30-79.

<sup>93</sup>Through 8-31-78.



- Gutman, Robert A. (1971), M.D. (Florida), *Associate Professor of Medicine*, 2403 Wrightwood Avenue
- <sup>94</sup>Gutmann, Catherine A. (1977), M.P.H. (Michigan), *Assistant Professor of Nursing*, 24-H Stratford Hills Apartments, Chapel Hill, N.C.
- Guttman, Norman (1951), Ph.D. (Indiana), *Professor of Psychology*, 201 West Woodridge Drive
- Habig, Robert L. (1969), Ph.D. (Purdue), *Assistant Professor of Clinical Biochemistry*, 722 Duluth Street
- Hackel, Donald B. (1960), M.D. (Harvard), *Professor of Pathology*, 4018 Bristol Road
- Hacker, Herbert, Jr. (1965), Ph.D. (Michigan), *Associate Professor of Electrical Engineering*, 214-3 Pinegate Circle, Chapel Hill, N.C.
- Hagen, Per-Otto F. (1970), F.H.W.C. (Watt, Edinburgh, Scotland), *Associate Medical Research Professor of Experimental Surgery and Adjunct Assistant Professor of Biochemistry*, 1129 Little Creek Road
- Halber, Michael David (1977), M.D. (Colorado), *Assistant Professor of Radiology*, 114 Fairintosh Place
- Hall, Hugh Marshall, Jr. (1952), Ph.D. (Texas), *Professor of Political Science*, 613 Swift Avenue
- <sup>95</sup>Hall, James E. (1974), Ph.D. (California at Riverside), *Assistant Professor of Physiology*, 28 Lebanon Circle
- <sup>96</sup>Hall, Joanne E. (1972), M.S. (Ohio State), *Associate Professor of Nursing*, 2306 Thunder Road
- Hall, Kenneth D. (1958), M.D. (Duke), *Professor of Anesthesiology*, 2715 Montgomery Street
- Hall, William C. (1970), Ph.D. (Duke), *Associate Professor of Anatomy and Associate Professor of Psychology*, 129 Pinecrest Road
- Hallowell, John Hamilton (1942), Ph.D. (Princeton), Litt.D., *James B. Duke Professor of Political Science*, 3606 Darwin Road
- <sup>97</sup>Hamilton, Iain (1962), B.M. (London), *Mary Duke Biddle Professor of Music*, 40 Park Avenue, 19-D, New York, N.Y.
- Hamilton, John D. (1971), M.D. (Colorado), *Associate Professor of Medicine*, 3300 East Oak Drive
- Hamilton, Michael Amin (1971), M.P.H. (North Carolina at Chapel Hill), *Assistant Professor of Community and Family Medicine and Clinical Associate in the Department of Medicine*, Route 2, Box 116, Chapel Hill, N.C.
- Hammitt, Elliott Bryan (1973), M.D. (Duke), *Assistant Professor of Psychiatry*, Box 75, Polks Landing Station, Chapel Hill, N.C.
- Hammond, Charles B. (1968), M.D. (Duke), *Professor of Obstetrics and Gynecology*, 2827 McDowell Road
- Hammond, William Edward (1968), Ph.D. (Duke), *Associate Professor of Community and Family Medicine and Assistant Professor of Biomedical Engineering*, 4000 Forrestdale Drive
- Hammond, W. Michael (1976), M.Ph. (Columbia), *Assistant Professor of Anthropology*, Route 4, Box 535-A, Chapel Hill, N.C.
- Hamner, W. Clay (1977), D.B.A. (Indiana), *Professor of Business Administration*, 422 Westwood Drive, Chapel Hill, N.C.
- Han, Moo-Young (1967), Ph.D. (Rochester), *Professor of Physics*, 615 Duluth Street
- <sup>98</sup>Handler, Philip (1939), Ph.D. (Illinois), *James B. Duke Professor of Biochemistry and Nutrition*, 2700 Virginia Avenue, 1401 West, Washington, D.C.
- Handwerker, Stuart (1971), M.D. (Maryland), *Associate Professor of Pediatrics and Assistant Professor of Physiology*, 2951 Friendship Road
- Haney, Arthur F. (1976), M.D. (Arizona), *Assistant Professor of Obstetrics and Gynecology and Associate in the Department of Radiology*, 818 Anderson Street
- Hanks, John Kennedy (1954), M.A. (Columbia), *Professor of Music and Lecturer in Church Music*, 11 Scott Place
- Hansen, John P. (1976), M.D. (Wisconsin), *Assistant Professor of Community and Family Medicine*, 2318 Thunder Road
- Hardorp, Detlef Christoph (1978), Ph.D. (Princeton), *Assistant Professor of Mathematics*, 862 Louise Circle
- Harf, James E. (1978), Ph.D. (Indiana), *Visiting Professor of Political Science*, N-13 Villages Apartments, Smith-Level Road, Carrboro, N.C.
- Harman, Charles M. (1961), Ph.D. (Wisconsin), *Professor of Mechanical Engineering*, 2620 McDowell Road
- Harmel, Merel H. (1971), M.D. (Johns Hopkins), *Professor of Anesthesiology*, 3434 Rugby Road
- Harrell, Frank Eanes, Jr. (1978), Ph.D. (North Carolina at Chapel Hill), *Assistant Professor of Community and Family Medicine (Biostatistics)*, 4004 Deepwood Circle
- Harrelson, John Miles (1973), M.D. (Duke), *Assistant Professor of Orthopaedics in the Department of Surgery and Assistant Professor of Pathology*, Route 1, Box 140-A, Bahama, N.C.
- Harris, Cecil Craig (1967), M.S. (Tennessee), *Associate Professor of Radiology*, 2910 Welcome Drive
- Harris, Harold Joseph (1960), M.D. (Long Island Coll. of Medicine), *Associate Professor of Psychiatry and Assistant Professor of Pediatrics*, 2628 McDowell Road

<sup>94</sup>Leave of absence 9-1-78 through 6-30-79

<sup>95</sup>Through 6-30-78.

<sup>96</sup>Sabbatical leave 1978-79.

<sup>97</sup>Through 8-31-78.

<sup>98</sup>Leave of absence 7-1-69 through 6-30-79.

- <sup>99</sup>Harris, Jerome Sylvan (1936), M.D. (Harvard), *J. Buren Sidbury Professor of Pediatrics and Professor of Biochemistry*, Route 2, Box 427-AA, Pleasant Green Road
- <sup>100</sup>Harris, Leland (1977), Ph.D. (Iowa), *Visiting Professor of Chemistry*, Apartment 28-C, 2836 Chapel Hill Road
- Harris, Robert H., Jr. (1974), M.D. (Med. Coll. of Georgia), *Assistant Professor of Medicine*, 237 Argonne Drive
- Hartwig, Geoffrey B. (1977), M.D. (Duke), *Associate in the Department of Medicine*, 2616 Augusta Drive
- <sup>101</sup>Hartwig, Gerald Walter (1970), Ph.D. (Indiana), *Professor of History*, 3324 Rolling Hill Road
- Harvey, William John (1961), M.Ed. (North Carolina at Chapel Hill), *Associate Professor of Physical Education*, 5118 Russell Road
- Harwell, George Corbin (1935), Ph.D. (Duke), *Associate Professor of English*, 2115 Wilson Street
- Hathaway, Albert Earl (1970), M.D. (Hahnemann), *Associate in Community and Family Medicine (Occupational Medicine)*, 711 Staley Drive, Raleigh, N.C.
- <sup>102</sup>Havighurst, Clark C. (1964), J.D. (Northwestern), *Professor of Law and Professor of Community and Family Medicine*, 3610 Dover Road
- Havrilesky, Thomas M. (1969-70; 1971), Ph.D. (Illinois), *Associate Professor of Economics*, 1508 Alabama Avenue
- Hawkins, David Miller (1972), M.D. (Duke), *Associate Professor of Psychiatry*, 20 Rolling Road, Chapel Hill, N.C.
- Hawkins, Hal K. (1973), Ph.D., M.D. (Duke), *Assistant Professor of Pathology*, Route 2, Box 407, Chapel Hill, N.C.
- Hawley, Willis D. (1972), Ph.D. (California at Berkeley), *Associate Professor of Policy Sciences and Political Science*, 1917 South Lakeshore Drive, Chapel Hill, N.C.
- <sup>103</sup>Hayes, Morris L. (1975), M.S. (Rensselaer Polytechnic Institute), *Professor of Naval Science*, 4124 Cobblestone Drive
- Hedges, Inez Kathleen (1976), Ph.D. (Wisconsin), *Assistant Professor of Romance Languages*, 311 West Markham Avenue
- Heinz, Edward Ralph (1978), M.D. (Pennsylvania), *Professor of Radiology*, 2647 Umstead Road
- Hellmers, Henry (1965), Ph.D. (California at Berkeley), *Professor of Botany and Professor of Forestry*, 1646 Marion Avenue
- <sup>104</sup>Helmer, Dianne Christine (1977), M.S. (Utah), *Instructor in Nursing*, Apartment D-2, 1426 Wyldewood Road
- Hempel, Franklin Glenn (1973), Ph.D. (Texas), *Assistant Medical Research Professor of Physiology*, 1410 Acadia Street
- Henkens, Robert W. (1968), Ph.D. (Yale), *Associate Professor of Chemistry*, 2116 Pershing Street
- Henry, James Donald (1960), M.M. (Indiana), *Assistant Professor of Music*, Route 2, Box 516-C
- Henry, Stuart C. (1959), Ph.D. (Duke), *Professor of American Christianity in the Divinity School*, Apartment K-1-A, 1500 Duke University Road
- Herlinger, Jan William (1977), Ph.D. (Chicago), *Assistant Professor of Music*, 1026 Monmouth Avenue
- Heron, S. Duncan, Jr. (1950), Ph.D. (North Carolina at Chapel Hill), *Professor of Geology*, 4425 Kerley Road
- Herpok, Franz Josef (1978), M.B.A. (Cornell), *Associate in the Department of Community and Family Medicine*, 3403 Ogburn Court
- <sup>105</sup>Herriott, Pamela Rupp (1977), M.S.N. (North Carolina at Chapel Hill), *Instructor in Nursing*, Route 1, Box 49, Cedar Grove, N.C.
- Hershfield, Mary Vickers (1976), Ph.D. (Georgetown), *Assistant Medical Research Professor of Microbiology*, 4019 Bristol Road
- Hershfield, Michael Steven (1976), M.D. (Pennsylvania), *Assistant Professor of Medicine and Assistant Professor of Biochemistry*, 4019 Bristol Road
- <sup>106</sup>Herzog, Frederick L. (1960), Th.D. (Princeton), *Professor of Systematic Theology in the Divinity School*, 2936 Chapel Hill Road
- Hester, David Alan (1978), M.D. (Oklahoma), *Associate in the Department of Medicine*, Route 2, Box 523 Linden Road
- Hewitt, Donna W. (1973), M.Nurs. (South Carolina), *Assistant Professor of Nursing*, 4148 Deepwood Circle
- Heyden, Siegfried (1966), M.D. (Univ. of Berlin), *Professor of Community and Family Medicine*, 2729 Montgomery Street
- Heyman, Albert (1953), M.D. (Maryland), *Professor of Medicine*, 1216 Woodburn Road

<sup>99</sup>Retired 8-31-78.

<sup>100</sup>Through 5-31-78.

<sup>101</sup>Sabbatical leave 1978-79.

<sup>102</sup>Sabbatical leave 1978-79.

<sup>103</sup>Through 9-9-78.

<sup>104</sup>Through 8-31-78.

<sup>105</sup>Through 12-31-78.

<sup>106</sup>Sabbatical leave, fall 1978-79.

- Hickman, David M. (1977), M.S. (Air Force Institute of Technology), Visiting Assistant Professor of Aerospace Studies, 2614 Freemont Road
- Hight, Timothy Kenyon (1977), Ph.D. (Stanford), Assistant Professor of Mechanical Engineering and Materials Science, Apartment C, 2015 Yearby Avenue
- Hijmans, Jacqueline (1965), M.D. (State Univ., Leiden, Holland), Assistant Professor of Medicine and Instructor in Physiology, Route 2, Box 427-AA, Pleasant Green Road
- Hill, Gale Bartholomew (1967), Ph.D. (Duke), Associate Professor of Obstetrics and Gynecology and Assistant Professor of Microbiology in the Department of Microbiology and Immunology, Route 2, Box 512
- Hill, Robert L. (1961), Ph.D. (Kansas), James B. Duke Professor of Biochemistry, 2510 Perkins Road
- Hilton, Mary C. (1977), M.D. (Maryland), Clinical Associate in the Department of Community and Family Medicine, Route 1, Box 184-V2, Hillsborough, N.C.
- Hindman, Michael C. (1976), M.D. (Illinois), Associate in Medicine, 3 Pinetree Lane, Route 2, Chapel Hill, N.C.
- Hine, Frederick R. (1958), M.D. (Yale), Professor of Psychiatry, 2317 Prince Street
- Hines, Michael Lee (1978), Ph.D. (Chicago), Assistant Medical Research Professor of Physiology, 39 Jefferson Drive
- Hirschman, Charles (1972), Ph.D. (Wisconsin), Associate Professor of Sociology, 1810 Glendale Avenue
- <sup>107</sup>Hizi, Amnon (1977), Ph.D. (Wiezmann Inst. of Science, Rehovot, Israel), Medical Research Associate in the Department of Microbiology and Immunology, 859 Louise Circle
- Hobbs, Marcus Edwin (1935), Ph.D. (Duke), University Distinguished Service Professor of Chemistry, 115 Pinecrest Road
- Hochmuth, Robert Milo (1978), Ph.D. (Brown), Professor of Biomedical Engineering, 2502 Tryon Road
- Hockschild, Jennifer Lucy (1978), M.Ph. (Yale), Instructor in Policy Sciences, 813 Watts Street
- Hodel, Richard Earl (1965), Ph.D. (Duke), Associate Professor of Mathematics, 2729 Circle Drive
- Hodges, Luther Hartwell, Jr. (1978), M.B.A. (Harvard), Professor of the Practice of Management in the Graduate School of Business Administration, 534 Hampstead Place, Charlotte, N.C.
- Hogue, Carol Clarke (1963), M.S.N. (Duke), Ph.D. (North Carolina at Chapel Hill), Associate Professor of Nursing and Assistant Professor of Community and Family Medicine, 2913 Welcome Drive
- <sup>108</sup>Hogue, Henry Harlan (1977), Ph.D. (Duke), Instructor and Research Associate in Physics, 1225 West Cornwallis Road
- <sup>109</sup>Holley, Irving Brinton, Jr. (1947), Ph.D. (Yale), Professor of History, 2506 Wrightwood Avenue
- Hollday, Frederic B. M. (1956), Ph.D. (Duke), Professor of History, 1824 Forest Road
- Holmes, Edward W., Jr. (1973), M.D. (Pennsylvania), Associate Professor of Medicine and Assistant Professor of Biochemistry, 2701 Augusta Drive
- <sup>110</sup>Holsti, Ole Rudolf (1974), Ph.D. (Stanford), George V. Allen Professor of International Affairs in the Department of Political Science, 2439 Tilghman Circle, Chapel Hill, N.C.
- Hopkins, Everett Harold (1961), A.M. (Pennsylvania), LL.D., Professor of Education, 1520 Pinecrest Road
- Horner, Jennifer (1978), Ph.D. (Florida), Assistant Professor of Speech Pathology in the Department of Surgery, 5016 Raintree Road
- Horton, Grace C. (1969), B.S. (Albright), Assistant Professor of Physical Therapy, 8 Greenfield Court
- Horton, Theresa Elizabeth (1964), M.S.N.E. (Pittsburgh), Associate Professor of Nursing, Apartment 3, 810 Clarendon Street
- <sup>111</sup>Hough, Jerry F. (1973), Ph.D. (Harvard), Professor of Political Science and Policy Sciences, 435 Knickerbocker Road, Tenafly, N.Y.
- Haupt, Jeffrey Lyle (1975), M.D. (Baylor), Associate Professor of Psychiatry, 4533 Hunter's Ridge Trail
- <sup>112</sup>House, James Stephen (1970), Ph.D. (Michigan), Associate Professor of Sociology, 1608 Delaware Avenue
- Howard, Emma J. (1974), M.S. (North Carolina at Greensboro), Instructor in Physical Education, 112 Leon Street
- <sup>113</sup>Hsia, Shyuan (1973), Ph.D. (Washington), Assistant Medical Research Professor of Microbiology and Immunology, 1313 Elmset Lane
- Huang, Andrew T. (1971), M.D. (Med. Coll. of National Taiwan Univ.), Associate Professor of Medicine, 223 B Route 7
- Hubbard, William J. (1978), Ph.D. (Iowa State), Medical Research Associate in Immunology in the Department of Microbiology and Immunology, 119 West Seeman Street
- Huber, Joel C. (1978), Ph.D. (Pennsylvania), Associate Professor of Business Administration, 1212 Hill Street

<sup>107</sup>Through 3-31-78.

<sup>108</sup>Through 8-31-78.

<sup>109</sup>Leave of absence 1978-79.

<sup>110</sup>Leave of absence 1978-79.

<sup>111</sup>Leave of absence 1978-79.

<sup>112</sup>Through 8-31-78.

<sup>113</sup>Through 10-31-78.



- Huber, Thomas Michael (1978), Ph.D. (Chicago), *Assistant Professor of History*, Apartment D-2 1479 Newcastle Road
- Hudson, William R. (1961), M.D. (Bowman Gray), *Professor of Otolaryngology*, 504 Compton Place
- Hughes, John Silver (1976), Ph.D. (Purdue), *Associate Professor of Business Administration*, Burris Place, Chapel Hill, N.C.
- Hull, Alexander (1962), Ph.D. (Washington), *Associate Professor of Romance Languages*, 2318 Prince Street
- Humphrey, Patricia Ann (1972), M.P.H. (North Carolina at Chapel Hill), *Assistant Professor of Nursing*, 1606 University Drive
- Hurwitz, Barrie James (1978), M.B. (Witwatersrand), *Assistant Professor of Medicine (Neurology)*, 2815 DeKalb Street
- Huse, Mary Martin (1959), Ph.D. (Duke), *Assistant Professor of Medical Psychology in the Department of Psychiatry and Associate in Physical Therapy*, Route 7, Box 270, Ephesus Church Road
- Hylander, William L. (1971), Ph.D., D.D.S. (Chicago), *Associate Professor of Anatomy and Associate Professor of Anthropology*, 2806 Legion Avenue
- Ideker, Raymond E. (1978), M.D., Ph.D. (Tennessee), *Assistant Professor of Pathology and Assistant Professor of Medicine*, Apartment D, 1917 Front Street
- <sup>114</sup>Idriss, Ziad H. (1976), M.D. (American Univ. of Beirut, Lebanon), *Assistant Professor of Pediatrics*, 5302 Beaumont Drive
- Ingram, O. Kelly (1959), B.D. (Duke), *Professor of Parish Ministry in the Divinity School*, Apartment 25-G, 1315 Morreene Road
- Jackson, Donald C. (1973), M.B., Ch.B. (Univ. of Sheffield, England), *Associate Professor of Radiology*, Route 8, Box 398, Infinity Road
- Jackson, Jacquelyne Johnson (1968), Ph.D. (Ohio State), *Associate Professor of Medical Sociology in the Department of Psychiatry*, P.O. Box 8522
- Jackson, Robert Joan Victor (1977), Ph.D. (Princeton), *Assistant Professor of Mathematics*, 2801 Shoreham Street
- Jackson, Susan Klem (1978), M.A. (Middlebury), *Instructor in Romance Languages*, Apartment 2-E, 1600 Anderson Street
- <sup>115</sup>Jackson, Wallace (1965), Ph.D. (Pennsylvania), *Associate Professor of English*, 1310 Kent Street
- Jaeger, Boi Jon (1972), Ph.D. (Duke), *Professor of Health Administration*, 3919 Saint Marks Road
- Jakoi, Emma R. (1977), Ph.D. (Duke), *Assistant Professor of Anatomy*, 2314 Woodrow Street
- Jarrell, John A., Jr. (1972), M.D. (Johns Hopkins), *Assistant Clinical Professor of Anesthesiology*, 2924 Buckingham Road
- Jayne, Benjamin A. (1976), Ph.D. (Yale), *Professor in the School of Forestry and Environmental Studies*, 2730 Circle Drive
- Jeffs, Peter Walter (1964), Ph.D. (Natal, South Africa), *Professor of Chemistry*, 3209 Cromwell Road
- Jegaththy, Brian V. (1976), M.B. (Ceylon), *Assistant Professor of Medicine (Dermatology)*, 2432 Tryon Road
- Jelovsek, Frederick R. (1975), M.D. (Michigan), *Assistant Professor of Obstetrics and Gynecology and Assistant Professor of Community and Family Medicine*, 3004 Harriman Road
- <sup>116</sup>Jenkins, Marianna Duncan (1948), Ph.D. (Bryn Mawr), *Professor of Art*, Apartment 6, 2132 Bedford Street
- Jennings, Robert B. (1975), M.D. (Northwestern), *Professor of Pathology*, 2818 Chelsea Circle
- <sup>117</sup>Jezierski, Bronislas de Leval (1958), Ph.D. (Harvard), *Associate Professor of Slavic Languages and Literatures*, 321-B Languages
- Jimenez, John P. (1965), M.D. (Med. Coll. of Virginia), *Associate Professor of Radiology*, 1604 Woodburn Road
- Jirtle, Randy L. (1977), Ph.D. (Wisconsin), *Associate in the Department of Radiology*, 1507 Blount Street
- Jöbbsis, Frans F. (1964), Ph.D. (Michigan), *Professor of Physiology*, 1407 Colewood Drive
- Joerg, Frederick Charles (1947), M.B.A. (Harvard), *Professor of Business Administration and Professor of Forest Management*, 2424 Wrightwood Avenue
- <sup>118</sup>Johns, Sheridan Waite, III (1970), Ph.D. (Harvard), *Associate Professor of Political Science*, 3219 Waterbury Drive
- Johnson, Armead H. (1974), Ph.D. (Baylor), *Assistant Medical Research Professor of Immunology in the Department of Microbiology and Immunology*, 1406 Oakland Avenue
- Johnson, Charles (1970), M.D. (Howard), *Associate Professor of Medicine*, Apartment 6 C, 200 Seven Oaks Road
- Johnson, Charles B. (1956), Ed.D. (Duke), *Associate Professor of Education*, 2714 McDowell Street
- Johnson, Charles E. (1976), Ph.D. (Duke), *Assistant Medical Research Professor of Anesthesiology and Assistant Professor of Mechanical Engineering*, 2214 Shoreham Street

<sup>114</sup>Leave of absence 2-1-78 through 1-31-79.

<sup>115</sup>Sabbatical leave, spring 1978-79.

<sup>116</sup>Retired 2-28-78.

<sup>117</sup>Sabbatical leave, spring 1978-79.

<sup>118</sup>Sabbatical leave 1978-79.



- Johnson, Edward Anthony (1963), M.D. (Univ. of Sheffield, England), *Professor of Physiology*, 106 Ridge Trail, Chapel Hill, N.C.
- Johnson, G. Allan (1978), Ph.D. (Duke), *Assistant Professor of Radiology*, 410 Morreene Road
- Johnson, Terry W., Jr., (1954), Ph.D. (Michigan), *Professor of Botany*, 2408 Prince Street
- <sup>119</sup>Johnsrude, Irwin S. (1966), M.D. (Manitoba), *Professor of Radiology*, 2702 Spencer Street
- Johnston, William Webb (1963), M.D. (Duke), *Professor of Pathology*, 1608 University Drive
- Joines, William T. (1966), Ph.D. (Duke), *Associate Professor of Electrical Engineering*, 4010 Deepwood Circle
- Joklik, Wolfgang Karl (1968), D.Phil. (Oxford, England), *James B. Duke Professor of Microbiology and Immunology*, 3902 Regent Road
- Jones, Barney L. (1956), Ph.D. (Duke), *Professor of Religion*, 2622 Pickett Road
- Jones, Buford (1962), Ph.D. (Harvard), *Associate Professor of English*, 1106 West Knox Street
- Jones, James David (1963), M.D. (Duke), *Associate Professor of Psychiatry and Assistant Professor of Pediatrics*, 3851 Somerset Drive
- Jones, Phillip Lisle (1977), Ph.D. (California at Los Angeles), *Assistant Professor of Materials Science*, 415 Clarion Drive
- Jones, Rayford Scott (1971), M.D. (Texas), *Professor of Surgery and Assistant Professor of Physiology*, Route 1, Box 44, Creedmoor, N.C.
- Jones, Robert H. (1975), M.D. (Johns Hopkins), *Assistant Professor of Surgery and Assistant Professor of Radiology*, 2721 Saddle Drive
- Joslin, Richard G. (1977), M.D. (Virginia), *Clinical Associate in the Department of Community and Family Medicine*, 5310 Russell Road
- <sup>120</sup>Kaden, Bruce R. (1977), M.D. (Illinois), *Associate in the Department of Medicine*, Route 2, Box 347, Chapel Hill, N.C.
- Kamin, Henry (1948), Ph.D. (Duke), *Professor of Biochemistry*, 2417 Perkins Road
- Kane, William J. (1974), M.D. (Temple), *Associate Professor of Community and Family Medicine*, 5 Breton Place
- Kariman, Khalil (1977), M.D. (Meshed Med. Sch., Iran), *Associate in the Department of Medicine*, Apartment 1-L, 311 South LaSalle Street
- Karis, Joannes, H. (1975), M.D. (State Univ. of Utrecht, Holland), *Professor of Anesthesiology*, 3923 Saint Marks Road
- Katz, Henry Jacob (1967), M.A.T. (Duke), *Assistant Professor of Mathematics*, 1118 Woodburn Road
- Katz, Samuel Lawrence (1968), M.D. (Harvard), *Wilbert C. Davison Professor of Pediatrics*, Route 2, Box 121, Piney Mountain Road, Chapel Hill, N.C.
- <sup>121</sup>Katzenmeyer, William C. (1967), Ed.D. (Duke), *Professor of Education*, 2502 Tryon Drive
- Kaufman, Bernard (1968), Ph.D. (Indiana), *Associate Professor of Biochemistry*, 2900 Arnold Road
- <sup>122</sup>Kaufman, Jane Steinman (1973), M.S. (Ohio State), *Assistant Professor of Nursing*, 118 Landsbury Drive
- Kaufman, Michael David (1977), M.D. (Duke), *Assistant Professor of Medicine (Neurology)*, 2442 Tryon Road
- <sup>123</sup>Kaufman, Russel E. (1977), M.D. (Ohio State), *Associate in the Department of Medicine*, 118 Landsbury Drive
- Kaufmann, Peter G. (1975), Ph.D. (Chicago), *Associate in Otolaryngology in the Department of Surgery and Associate in Physiology*, 128 Emerald Circle
- Kay, Richard Frederick (1973), Ph.D. (Yale), *Associate Professor of Anatomy and Adjunct Associate Professor of Anthropology*, 1006 West Trinity Avenue
- Keefe, Francis Joseph, Jr. (1978), Ph.D. (Ohio), *Assistant Professor of Medical Psychology in the Department of Psychiatry*, 12 Ashley Road
- Keith, Charles Rush (1963), M.D. (Kansas), *Associate Professor of Psychiatry*, Route 4, Box 407, Chapel Hill, N.C.
- Keller, Thomas Franklin (1959), Ph.D. (Michigan), C.P.A., *R.J. Reynolds Industries Professor of Business Administration*, 1024 West Markham Avenue
- <sup>124</sup>Kelley, Allen Charles (1972), Ph.D. (Stanford), *Professor of Economics*, 4607 Chicopee Trail
- Kelling, Douglas G., Jr. (1975), M.D. (Harvard), *Assistant Professor of Medicine*, 512 Winfield Boulevard, S.E., Concord, N.C.
- <sup>125</sup>Kelly, James Reginald (1976), M.D. (Duke), *Assistant Professor of Medicine and Assistant Professor of Community and Family Medicine*, 3505 Manford Drive
- Kelvin, Frederick M. (1975), M.B. (London), *Assistant Professor of Radiology*, 856 Shady Lawn, Chapel Hill, N.C.

<sup>119</sup>Through 6-30-78.

<sup>120</sup>Through 6-30-78.

<sup>121</sup>Through 8-31-78.

<sup>122</sup>Through 5-31-78.

<sup>123</sup>Leave of absence 6-24-78 through 7-1-80.

<sup>124</sup>Sabbatical leave 1978-79.

<sup>125</sup>Through 7-31-78.

- Kenan, Patrick Dan (1965–74; 1975) M.D. (Duke), *Associate Professor of Otolaryngology in the Department of Surgery*, 804 Anderson Street
- Kerckhoff, Alan C. (1958), Ph.D. (Wisconsin), *Professor of Sociology*, 1511 Pinecrest Road
- <sup>126</sup>Kerr, Robert Blackburn (1965), Ph.D. (Johns Hopkins), *Professor of Electrical Engineering*, 2220 Elmwood Avenue
- Kessler, Lawrence (1976), Ph.D. (Texas at Austin), *Assistant Professor of Business Administration*, 5505 Mandell Road
- Kilbey, Marlyne (1973), Ph.D. (Houston), *Associate Professor of Medical Psychology in the Department of Psychiatry*, 1208 Vickers Avenue
- Killenber, Paul Gustav (1972), M.D. (Pennsylvania), *Assistant Clinical Professor of Medicine*, 2914 Friendship Road
- Kim, Sung-Hou (1970), Ph.D. (Pittsburgh), *Associate Professor of Biochemistry*, 604 Starmont Drive
- Kim, Young Sik (1978), Ph.D. (Hawaii), *Assistant Medical Research Professor of Physiology*, Apartment 3–H, 2716 Middleton Street
- Kimble, Gregory Adams (1977), Ph.D. (State Univ. of Iowa), *Professor of Psychology*, 3100 Cornwall Road
- Kimm, Sue Y. S. (1976), M.D. (Yale), *Assistant Professor of Pediatrics and Assistant Professor of Medicine*, Apartment 24, 2330 Hilton Avenue
- King, Burton B. (1967), M.A. (Northwestern), *Associate in Audiology in the Division of Otolaryngology in the Department of Surgery*, 5101 Peppercorn Street
- Kinhead, Duncan T. (1978), Ph.D. (Michigan), *Assistant Professor of Art*, 918 West Markham Avenue
- Kinney, Thomas Roberts (1978), M.D. (Duke), *Assistant Professor of Pediatrics*, 3120 Devon Road
- Kirkendale, Warren (1967), Dr. Phil. (Vienna), *Professor of Musicology*, 2422 Tryon Road
- Kirks, Donald Ray (1978), M.D. (Washington University), *Associate Professor of Radiology, and Associate Professor of Pediatrics*, 73 Fernwood Lane, Chapel Hill, N.C.
- Kirshner, Norman (1956), Ph.D. (Pennsylvania State), *Professor of Pharmacology and Professor of Biochemistry*, 2524 Wrightwood Avenue
- Kissam, Philip Charles (1978), LL.B. (Yale), *Visiting Professor of Law*, 2809 Legion Avenue
- Kisslo, Joseph Andrew, Jr. (1974), M.D. (Hahnemann Med. Coll.), *Associate Professor of Medicine and Assistant Professor of Radiology*, 3701 Saint Marks Road
- Kitchen, Joseph Weston, Jr. (1962), Ph.D. (Harvard), *Associate Professor of Mathematics*, 1600 Delaware Avenue
- Klein, Dolph (1974), Ph.D. (Rutgers), *Associate Professor of Microbiology*, 1931 Fountain Ridge Road, Chapel Hill, N.C.
- Klein, Fritz F. (1973), Ph.D. (Duke), *Adjunct Assistant Professor of Anesthesiology*, Apartment 31–D, 2922 Chapel Hill Road
- Klintworth, Gordon K. (1964), Ph.D., M.B. (Univ. of Witwatersrand, South Africa), *Professor of Pathology*, 2718 Spencer Street
- Klopfer, Peter H. (1958), Ph.D. (Yale), *Professor of Zoology*, Route 1, Box 184
- Knight, Conrad Merton (1963), B.S. (Norwich), *Associate in Radiology*, Route 6, Box 194, Chapel Hill, N.C.
- Knoerr, Kenneth Richard (1961), Ph.D. (Yale), *Professor of Forest Meteorology and Associate Professor of Biometeorology in the Department of Botany*, 1608 Woodburn Road
- Kolena, John Alan (1978), Ph.D. (Indiana), *Visiting Assistant Professor of Physics*, Apartment D–14, 700 Morreene Road
- Kong, Yihong (1967), M.D. (National Defense Medical Center, Taipei, Taiwan), *Associate Professor of Medicine*, 2814 Dekalb Street
- Koren, Hillel S. (1976), Ph.D. (Freiburg, Germany), *Assistant Professor of Immunology*, 16 Stoneridge Circle
- Kornberg, Allan (1965), Ph.D. (Michigan), *Professor of Political Science*, 23 Scott Place
- Korobkin, Melvyn Theodore (1978), M.D. (Yale), *Professor of Radiology*, 512 Redbud Road, Chapel Hill, N.C.
- <sup>127</sup>Kort, Wesley A. (1965), Ph.D. (Chicago), *Professor of Religion*, 3514 Winding Way
- Kraines, David (1970), Ph.D. (California at Berkeley), *Associate Professor of Mathematics*, 1720 Duke University Road
- Kramer, Richard Spencer (1972), M.D. (Duke), *Associate in Neurosurgery*, 1531 Hermitage Court
- Krause, David R. (1976), M.B.A. (West Florida), *Visiting Associate Professor of Naval Science*, 12 Cotswold Place
- Kredich, Deborah W. (1971), M.D. (Michigan), *Assistant Professor of Pediatrics*, 57 Kimberly Drive
- Kredich, Nicholas M. (1968), M.D. (Michigan), *Associate Professor of Medicine and Assistant Professor of Biochemistry*, 57 Kimberly Drive
- Kremen, Irwin (1963), Ph.D. (Harvard), *Assistant Professor of Psychology*, 216 Forestwood Drive

<sup>126</sup>Sabbatical leave, fall 1978–79.

<sup>127</sup>Sabbatical leave, fall 1978–79.

- <sup>128</sup>Kreps, Juanita M. (1955), Ph.D. (Duke), *James B. Duke Professor of Economics*, 1407 West Pettigrew Street
- Krigbaum, William R. (1952), Ph.D. (Illinois), D.Sc., *James B. Duke Professor of Chemistry*, 2504 Wilson Street
- <sup>129</sup>Krueger, Ronald Paul (1969), M.D. (Duke), *Assistant Professor of Pediatrics and Assistant Professor of Urology*, 1200 Anderson Street
- Kruzel, Joseph John (1976), Ph.D. (Harvard), *Assistant Professor of Political Science*, 9 Ellen Place, Chapel Hill, N.C.
- Krynski, Magnus Jan (1959–1960; 1966), Ph.D. (Columbia), *Professor of Slavic Languages and Literatures*, 1004 West Markham Avenue
- Kuhn, Cynthia Moreton (1978), Ph.D. (Duke), *Assistant Professor of Pharmacology*, 2305 Elmwood Avenue
- Kuhn, David John (1977), Ph.D. (Purdue), *Associate Professor of Education*, 4900 Mandell Road
- Kuniholm, Bruce R. (1976), Ph.D. (Duke), *Assistant Professor of Policy Sciences and History*, 1515 Pinecrest Road
- Kunst, Richard A. (1975), M.A. (California at Berkeley), *Instructor in History*, 2133 Sunset Avenue
- Kunze, LuVern H. (1973), Ph.D. (Iowa), *Professor of Hearing and Speech Pathology in the Department of Surgery*, 2707 Tryon Road
- Kurlander, Roger J. (1976), M.D. (Chicago), *Associate in the Department of Medicine*, Castillian Villa Apartments, Ephesus Church Road, Chapel Hill, N.C.
- Kylstra, Johannes A. (1965), Ph.D., M.D. (Univ. of Leiden, Holland), *Professor of Medicine and Associate Professor of Physiology*, 2924 Friendship Road
- Lachman, Lawrence Barnett (1978), Ph.D. (Boston), *Medical Research Associate in Immunology in the Department of Microbiology and Immunology*, Apartment 10, 208 Pinegate Circle, Chapel Hill, N.C.
- Lack, Leon (1965), Ph.D. (Columbia), *Professor of Pharmacology*, 2936 Welcome Drive
- Lacy, Creighton (1953), B.D., Ph.D. (Yale), *Professor of World Christianity in the Divinity School*, 2714 Dogwood Road
- Ladwig, Stephen H. (1978), M.D. (Northwestern), *Assistant Professor of Radiology*, 3400 Cambridge Road
- Lakin, Martin (1958), Ph.D. (Chicago), *Professor of Medical Psychology in the Department of Psychiatry and Professor of Psychology*, 2709 McDowell Road
- Landers, Maurice B., III (1969), M.D. (Michigan), *Professor of Ophthalmology*, 2703 Montgomery Street
- Lang, David J. (1968), M.D. (Harvard), *Professor of Pediatrics and Associate Professor of Virology in the Department of Microbiology and Immunology*, Route 2, Box 440
- Lange, David L. (1971), LL.B. (Illinois), *Professor of Law*, 42–G Stratford Hills Apartments, Chapel Hill, N.C.
- Langford, Thomas A. (1956), B.D., Ph.D. (Duke), *Professor of Systematic Theology in the Divinity School*, 2936 Chapel Hill Road
- Langlois, Alphonse J. (1973), Ph.D. (Duke), *Assistant Clinical Professor of Experimental Surgery*, 1720 Vista Street
- <sup>130</sup>Lanning, Charles Frederic (1973), M.D. (Kansas), *Associate Professor of Anesthesiology and Associate in the Department of Pediatrics*, 3903 Saint Marks Road
- Larson, Arthur (1958), D.C.L. (Oxford), *James B. Duke Professor of Law*, 1 Learned Place
- <sup>131</sup>Larson, Raymond Leigh (1977), Ph.D. (Oregon), *Visiting Professor of Management Sciences in the Graduate School of Business Administration*, Apartment 2, 917 Dacian Avenue
- Laszlo, John (1960), M.D. (Harvard), *Professor of Medicine*, Route 1, Box 266, Cornwallis Road
- Lauf, Peter K. (1968), M.D. (Univ. of Freiburg), *Professor of Physiology and Assistant Professor of Immunology*, 3535 Hamstead Court
- Laughhunn, Danny J. (1968–69; 1972–75; 1976), D.B.A. (Illinois), *Professor of Business Administration*, 298 Highview Drive, Chapel Hill, N.C.
- Lavacca, Mariann DiMinno (1975), M.A. (New York Univ.), *Assistant Professor of Nursing and Clinical Associate in the Department of Psychiatry*, Apartment 16–B, 3301 Shannon Road
- Lawrence, August R. (1974), M.A.T. (Duke), *Instructor in Mathematics*, 129 Forest Road, Raleigh, N.C.
- Lawrence, Bruce B. (1971), Ph.D. (Yale), *Associate Professor of Religion*, 2702 Stuart Drive
- Lawson, Dewey T. (1974), Ph.D. (Duke), *Assistant Professor and Research Associate in Physics*, 1007 Urban Avenue
- Lazarus, Gerald Sylvan (1975), M.D. (George Washington), *J. Lamar Callaway Professor of Dermatology*, 21 Heath Place
- Leach, Richard H. (1955), Ph.D. (Princeton), *Professor of Political Science*, 1313 Woodburn Road
- LeBar, John A. (1965), Ed.D. (Duke), *Associate Professor of Physical Education*, 1 Winthrop Court

<sup>128</sup>Special leave of absence, 1–20–77 to become Secretary of Commerce.

<sup>129</sup>Sabbatical leave 7–1–78 through 6–30–79.

<sup>130</sup>Through 7–31–78.

<sup>131</sup>Through 5–31–78.



- Lebovitz, Harold E. (1962), M.D. (Pittsburgh), *Professor of Medicine and Associate Professor of Physiology*, Apartment C-2, 1340 New Castle Road
- Lecocq, Frank R. (1975), M.D. (Illinois), *Associate Professor of Medicine*, 4306 Nottaway Road
- Lee, Kerry L. (1974), Ph.D. (North Carolina at Chapel Hill), *Assistant Professor of Community and Family Medicine*, 354 Wesley Drive, Chapel Hill, N.C.
- <sup>132</sup>Lees, Jack A. (1971), Ph.D. (Chicago), *Assistant Professor of Mathematics*, Apartment A-2-A, 1500 Duke University Road
- Lefkowitz, Robert J. (1973), M.D. (Columbia), *Professor of Medicine and Assistant Professor of Biochemistry*, 3539 Hamstead Court
- <sup>133</sup>Lehane, Stephen F. (1976), Ed.D. (Columbia), *Assistant Professor of Education*, 1506 Ephesus Church Road, Chapel Hill, N.C.
- Leiby, Robert W. (1978), Ph.D. (Lehigh), *Visiting Assistant Professor of Chemistry*, Apartment 10-A, 2836 Chapel Hill Road
- Leis, Jonathan P. (1974), Ph.D. (Cornell), *Assistant Professor of Surgery and Assistant Professor of Virology in the Department of Microbiology and Immunology*, 5122 Kenwood Drive
- Lerner, Warren (1961), Ph.D. (Columbia), *Professor of History*, 2948 Friendship Road
- Lester, Allan J. (1975), M.B. (Otago Med. Sch., New Zealand), *Associate in Community and Family Medicine*, 1215 Alabama Avenue
- Levin, Betsy (1973), LL.B. (Yale), *Professor of Law*, 510 East Rosemary Street, Chapel Hill, N.C.
- Levy, Alan S. (1973), Ph.D. (Columbia), *Assistant Professor of Psychology*, 48-B Colonial Apartments
- Levy, Nelson Louis (1973), Ph.D. (Duke), M.D. (Columbia), *Associate Professor of Immunology in the Department of Microbiology and Immunology*, 4401 Malvern Road
- Lewicki, Roy J. (1977), Ph.D. (Columbia), *Associate Professor of Business Administration*, 2509 Foxwood Drive, Chapel Hill, N.C.
- Lewin, Arie Y. (1974), Ph.D. (Carnegie-Mellon), *Professor of Business Administration*, Cedar Falls Road, Chapel Hill, N.C.
- Lewis, Carol Jean Wilstrand (1978), Ph.D. (North Carolina at Chapel Hill), *Assistant Medical Research Professor of Pathology*, 2505 Vineyard Street
- Lewis, Darrell Vincent, Jr. (1978), M.D. (Minnesota), *Assistant Professor of Pediatrics*, 127 Robinette Court, Chapel Hill, N.C.
- Lewis, H. Gregg (1975), Ph.D. (Chicago), *Professor of Economics*, 4039 King Charles Road
- Lewis, Harold Walter (1946), Ph.D. (Duke), *Professor of Physics*, 1708 Woodburn Road
- <sup>134</sup>Lewis, Susan Hollingsworth (1977), J.D. (Texas), *Visiting Associate Professor of Law*, 107 Henderson Street, Chapel Hill, N.C.
- Li, Joseph Kwok-Kwong (1977), Ph.D. (California at Los Angeles), *Medical Research Associate in Virology in the Department of Microbiology and Immunology*, 4812 Berini Drive
- Lieberman, Melvyn (1968), Ph.D. (State Univ. of New York, Downstate Med. Center), *Professor of Physiology*, 1110 Woodburn Road
- Lincoln, C. Eric (1976), Ph.D. (Boston), *Professor of Religion*, Route 1, Box 271-N, Hillsborough, N.C.
- Linfors, Eugene William (1977), M.D. (Duke), *Associate in the Department of Medicine*, 2711 University Drive
- Lipscomb, Joseph, Jr. (1974), Ph.D. (North Carolina at Chapel Hill), *Assistant Professor of Policy Sciences and Economics*, 1515 Hermitage Court
- Livengood, Charles Harris, Jr. (1946), LL.B. (Harvard), *Professor of Law*, 2804 Chelsea Circle
- Livingstone, Daniel A. (1956), Ph.D. (Yale), *Professor of Zoology*, 2827 Ridge Road
- Llewellyn, Charles E., Jr. (1955), M.D. (Med. Coll. of Virginia), *Associate Professor of Psychiatry*, 3550 Hamstead Court
- Lloyd, Jane Marie (1961), M.A. (North Carolina at Chapel Hill), *Associate Professor of Physical Education*, 704 Louise Circle
- Lochmüller, Charles H. (1969), Ph.D. (Fordham), *Associate Professor of Chemistry*, 2819 McDowell Road
- Lockhead, Gregory (1965), Ph.D. (Johns Hopkins), *Professor of Psychology*, 101 Emerald Circle
- Logue, Gerald Lee (1971-72; 1974), M.D. (Pittsburgh), *Associate Professor of Medicine*, 4001 Cornwallis Road
- Logue, Patrick E. (1974), Ph.D. (North Dakota), *Associate Professor of Medical Psychology in the Department of Psychiatry*, 901 Bluestone Drive
- Long, Charles H. (1974), Ph.D. (Chicago), *Professor of Religion*, 405 Wesley Drive, Chapel Hill, N.C.
- <sup>135</sup>Long, Juanita Lee (1970), M.S. (North Carolina at Chapel Hill), *Assistant Professor of Nursing*, 216 Brook Lane
- Long, Thomas T., III (1974), M.D. (Bowman Gray), *Assistant Professor of Medicine*, 577 Foxwood Drive, S.E., Concord, N.C.
- Longley, William (1968), Ph.D. (Univ. of London), *Associate Professor of Anatomy*, 47 Lebanon Circle

<sup>132</sup>Through 8-31-78.

<sup>133</sup>Through 8-31-78.

<sup>134</sup>Through 6-30-78.

<sup>135</sup>Sabbatical leave 1978-79.



- Loro, Albert D., Jr. (1977), Ph.D. (Washington Univ.), Assistant Professor of Medical Psychology in the Department of Psychiatry and Assistant Professor of Community and Family Medicine, 214 West Markham Avenue
- Lourens, Ron Martin (1978), Ph.D. (Western Australia), Visiting Professor of Management Sciences in the Graduate School of Business Administration, 1416 Sedwick Road
- Loveland, Donald W. (1973), Ph.D. (New York Univ.), Professor of Computer Science, 3417 Cambridge Road
- Lowell, Seth Hawksworth (1978), Ph.D. (Minnesota), M.D. (Duke), Assistant Professor of Otolaryngology in the Department of Surgery, 2702 Spencer Street
- Lucas, Peter Wayne (1977), Ph.D. (Yale), Assistant Professor of Physics, 4 Winthrop Court
- Lucas, Richard Albert (1972), Ph.D. (North Carolina at Chapel Hill), Assistant Clinical Professor of Medical Psychology in the Department of Psychiatry, 2421 Sedgefield Drive, Chapel Hill, N.C.
- Lucey, John Denis (1978), M.D. (Hahnemann Med. Coll.), Assistant Professor of Orthopaedics in the Department of Surgery, 2713 Circle Drive
- Luke, Cynthia Strom (1977), M.S. (Boston University), Instructor in Nursing, 1429 Colewood Drive
- Luken, William L., Jr. (1976), Ph.D. (Yale), Assistant Professor of Chemistry, 3506 Manford Drive
- Lundberg, John G. (1970), Ph.D. (Michigan), Associate Professor of Zoology, 2813 McDowell Road
- <sup>136</sup>Lybecker, Martin E. (1977), LL.M. (Pennsylvania), Visiting Associate Professor of Law, 111 Cynthia Drive, Chapel Hill, N.C.
- Lynds, Barbara A. (1974), M.S. (Maryland), Assistant Professor of Nursing, 1121 Shelly Road, Raleigh, N.C.
- Lynn, William S., Jr. (1955), M.D. (Columbia), Professor of Medicine and Associate Professor of Biochemistry, Route 1, Box 296-C, Hillsborough, N.C.
- Lynts, George W. (1965), Ph.D. (Wisconsin), Associate Professor of Geology, 10 Cotswold Place
- <sup>137</sup>Macduff, John Nelson (1956), M.M.E. (New York Univ.), Professor of Mechanical Engineering, 2733 Dogwood Road
- Machemer, Robert E. (1978), M.D. (Freiburg, Germany), Professor of Ophthalmology, 2122 Campus Drive
- McCann, John Monroe (1978), Ph.D. (Purdue), Associate Professor of Business Administration, 4021 Nottaway Road
- McCarty, Kenneth Scott (1959), Ph.D. (Columbia), Professor of Biochemistry, 2713 Dogwood Road
- McCarty, Kenneth S., Jr. (1976), Ph.D., M.D. (Duke), Assistant Professor of Pathology and Assistant Professor of Medicine, 2511 Perkins Road
- McClay, David R. (1973), Ph.D. (North Carolina at Chapel Hill), Associate Professor of Zoology and Assistant Professor of Immunology in the Department of Microbiology and Immunology, 3206 Hadden Road
- McCullough, Thomas E. (1961), Th.D. (Southern Baptist Theological Seminary), Associate Professor of Religion, 2722 Circle Drive
- McCollum, Donald E. (1962), M.D. (Bowman Gray), Professor of Orthopaedic Surgery, 2207 Wilshire Drive
- McConahay, John B. (1974), Ph.D. (California at Los Angeles), Associate Professor of Policy Sciences and Psychology, 2101 Englewood Avenue
- McCool, Barbara P. (1975), Ph.D. (Ohio State), Associate Professor of Health Administration and Assistant Professor of Nursing, 20 Howell Lane, Chapel Hill, N.C.
- McCrea, Alice L. (1961), M.S. (Chicago), Assistant Professor of Radiation Therapy, Route 2, Box 20, 2911 Umstead Road
- McCrory, Michael Elliott (1977), M.D. (Tufts), Assistant Professor of Radiology, Route 2, Box 345-A, Chapel Hill, N.C.
- McElhaney, James H. (1973), Ph.D. (West Virginia), Professor of Biomedical Engineering, 3411 Cambridge
- McElroy, Marjorie B. (1970), Ph.D. (Northwestern), Associate Professor of Economics, 1726 Duke University Road
- <sup>138</sup>McGee, Jeanne (1974), Ph.D. (Indiana), Assistant Professor of Sociology, 145 Windsor Circle, Chapel Hill, N.C.
- McGrath, Diana E. (1975), Ph.D. (Pennsylvania State), Assistant Professor of Community and Family Medicine, 63 Fernwood Lane, Chapel Hill, N.C.
- McIntire, A. Sue Norville (1966), M.S.N. (Emory), Associate Professor of Nursing, 106 West Delafield Avenue
- McIntosh, Thomas James (1977), Ph.D. (Carnegie-Mellon University), Assistant Professor of Anatomy, 31 Jefferson Drive
- McKean, Margaret A. (1974), Ph.D. (California at Berkeley), Assistant Professor of Political Science, 3408 Pinafore Drive
- McKee, Patrick Allen (1969), M.D. (Oklahoma), Professor of Medicine and Assistant Professor of Biochemistry, 2616 Augusta Drive

<sup>136</sup>Through 6-30-78.

<sup>137</sup>Retired 8-31-78.

<sup>138</sup>Through 8-31-78.

- McKinney, John C.** (1957), Ph.D. (Michigan State), *Professor of Sociology*, Apartment J-6, 2106 Front Street
- McLelland, Robert** (1972), M.D. (Cincinnati), *Associate Professor of Radiology*, 3716 St. Marks Road
- McLeod, Gail** (1977), M.S.W. (North Carolina at Chapel Hill), *Clinical Associate in Psychiatric Social Work in the Department of Psychiatry*, 20 Davie Circle, Chapel Hill, N.C.
- McLeod, Michael E.** (1966), M.D. (Duke), *Associate Professor of Medicine*, 4007 Deepwood Circle
- McManus, Thomas Joseph** (1961), M.D. (Boston), *Associate Professor of Physiology*, 1408 Oakland Avenue
- McNamara, James O., Sr.** (1973), M.D. (Michigan), *Assistant Professor of Medicine*, 400 Lakeshore Lane, Chapel Hill, N.C.
- McNaull, Faye W.** (1978), M.S.N. (North Carolina at Chapel Hill), *Instructor in Nursing*, Route 7, Box 276
- <sup>139</sup>**McNeer, James Frederick** (1977), M.D. (Duke), *Associate in Medicine*, 516 Brighton Road
- McPhail, Andrew T.** (1968), Ph.D. (Glasgow), *Professor of Chemistry*, 5305 Partridge Street
- McPherson, Harry Thurman** (1955), M.D. (Duke), *Professor of Medicine*, 3915 Nottaway Road
- McQueary, John J.** (1974), B.S. (North Carolina Central Univ.), *Associate in the Department of Community and Family Medicine*, 5005 Pine Trail Drive
- Maddox, George Lamar, Jr.** (1960), Ph.D. (Michigan State), *Professor of Sociology and Professor of Medical Sociology in the Department of Psychiatry*, 2750 McDowell Road
- Magat, Wesley A.** (1974), Ph.D. (Northwestern), *Assistant Professor of Business Administration*, Willett Road, Route 2, Box 474
- Magness, Linda Kaye** (1978), M.D. (Louisville), *Assistant Professor of Radiology*, Apartment 201, 3520 Mayfair Street
- Mahoney, Edward P.** (1965), Ph.D. (Columbia), *Professor of Philosophy*, Apartment 22-H, 2836 Chapel Hill Road
- Maier, Charles S.** (1976), Ph.D. (Harvard), *Associate Professor of History*, 2015-E Yearby Street
- <sup>140</sup>**Maier, Steven F.** (1971), Ph.D. (Stanford), *Associate Professor of Business Administration*, 631 Brookview Drive, Chapel Hill, N.C.
- Malone, Terry Richard** (1977), M.S. (Duke), *Adjunct Associate in Physical Therapy*, 3401 Dover Road
- Maltbie, Allan Armstrong** (1974), M.D. (Emory), *Assistant Professor of Psychiatry*, 2432 Sedgefield Drive, Chapel Hill, N.C.
- Mandel, Lazaro J.** (1972), Ph.D. (Pennsylvania), *Associate Professor of Physiology*, 405 Whitehead Circle, Chapel Hill, N.C.
- Manring, Andres** (1975), Ph.D. (Ohio State), *Assistant Medical Research Professor of Physiology*, Apartment 3, 107 Hilton Avenue
- <sup>141</sup>**Mansbach, Charles Milton, III** (1970), M.D. (New York Univ.), *Associate Professor of Medicine*, 2431 Tryon Road
- Manton, Kenneth G.** (1978), Ph.D. (Duke), *Assistant Medical Research Professor of Community and Family Medicine and Adjunct Assistant Professor of Sociology*, Apartment 24, 2117 Bedford Drive
- Marchase, Richard Banfield** (1978), Ph.D. (Johns Hopkins), *Assistant Professor of Anatomy*, 3704 Tremont Drive
- Margerum, William H., Jr.** (1978), M.A. (Northern Colorado), *Visiting Assistant Professor of Aerospace Studies*, 4706 Berini Drive
- Marinos, Peter N.** (1968), Ph.D. (North Carolina State), *Professor of Electrical Engineering and Professor of Computer Science*, 2802 McDowell Road
- Markman, Sidney David** (1947), Ph.D. (Columbia), *Professor of Art History and Archaeology*, 919 Urban Avenue
- Maroof, Mohammad** (1978), M.B. (Liaquat Medical Coll.), *Assistant Professor of Anesthesiology*, Apartment 26-0, 311 South LaSalle Street
- Marsh, Gail R.** (1969), Ph.D. (Iowa), *Associate Professor of Medical Psychology in the Department of Psychiatry and Lecturer in Psychology*, 2713 McDowell Road
- Martin, David V.** (1962), Ed.D. (Duke), *Associate Professor of Education*, 1527 Hermitage Court
- Martinez, Salutaris** (1975), M.D. (Havana Univ.), *Assistant Professor of Radiology*, 4419 Malvern Road
- Massey, Marilyn Chapin** (1977), Ph.D. (Chicago), *Assistant Professor of Religion*, 325 Brandywine Road, Chapel Hill, N.C.
- Matteson, Mary Ann** (1978), M.S.N. (Duke), *Instructor in Nursing*, 1420 Arboretum Drive, Chapel Hill, N.C.
- Mauskopf, Josephine Mary** (1978), M.H.A. (Duke), *Associate in the Department of Health Administration*, 700 Brighton Road
- Mauskopf, Seymour** (1964), Ph.D. (Princeton), *Associate Professor of History*, 700 Brighton Road
- Medina, Miguel A., Jr.** (1976), Ph.D. (Florida), *Assistant Professor of Civil Engineering*, 803 Clarion Drive

<sup>139</sup>Through 6-15-78.

<sup>140</sup>Sabbatical leave, spring 1978-79.

<sup>141</sup>Sabbatical leave 8-1-78 through 7-30-79.

- Melges, Frederick Towne (1977), M.D. (Columbia), *Professor of Psychiatry*, 506 East Forest Hills Boulevard
- <sup>142</sup>Mellown, Elgin W., Jr. (1965), Ph.D. (Univ. of London), *Associate Professor of English*, 1004 Minerva Avenue
- Melosh, Robert James (1978), Ph.D. (Washington), *Professor of Civil Engineering*, 1311 Carolina Avenue
- <sup>143</sup>Melzer, Sara E. (1975), Ph.D. (Chicago), *Assistant Professor of Romance Languages*, 209 Watts Street
- Mendell, Lorne M. (1968), Ph.D. (Massachusetts Inst. of Tech.), *Associate Professor of Physiology*, 1812 Rolling Road, Chapel Hill, N.C.
- Mendell, Nancy R. (1974), Ph.D. (North Carolina at Chapel Hill), *Assistant Medical Research Professor of Immunology in the Department of Microbiology and Immunology and Assistant Medical Research Professor of Community and Family Medicine*, 1812 Rolling Road, Chapel Hill, N.C.
- Menzel, Daniel B. (1971), Ph.D. (California at Berkeley), *Professor of Pharmacology and Associate Professor of Experimental Medicine*, Route 1, Box 186-C, Hillsborough, N.C.
- Mericle, Mary Fontaine (1977), Ph.D. (North Carolina at Chapel Hill), *Assistant Professor of Business Administration*, 204-A Purefoy Road, Chapel Hill, N.C.
- Merritt, Gertrude (1975), A.B. (Duke), *Associate Professor in the Faculty of Arts and Sciences and Associate Librarian*, 621 Swift Avenue
- Merten, David Fischer (1977), M.D. (Cincinnati), *Associate Professor of Radiology and Assistant Professor of Pediatrics*, 122 Wolf's Trail, Route 5, Chapel Hill, N.C.
- Metzgar, Richard S. (1962), Ph.D. (Buffalo), *Professor of Immunology*, 3616 Westover Road
- Meyer, Horst (1959), Docteur ès sciences (Geneva, Switzerland), *Professor of Physics*, 2716 Montgomery Street
- Meyers, Carol L. (1976), Ph.D. (Brandeis), *Assistant Professor of Religion*, 3202 Waterbury Drive
- Meyers, Eric M. (1969), Ph.D. (Harvard), *Associate Professor of Religion*, 3202 Waterbury Drive
- Michalak, M. Victor (1950), Ph.D. (Indiana), *Associate Professor of English*, Apartment G-0-4, 3525 Mayfair Street
- Michalopoulos, George K. (1977), Ph.D. (Wisconsin), M.D. (Athens Univ., Greece), *Assistant Professor of Pathology*, Apartment G-0-6, 3554 Mayfair Road
- Michlin, Michael Lewis (1977), Ph.D. (Minnesota), *Assistant Professor of Education*, Apartment 11, 18 Balmoray Court
- Mickey, Don D. (1973), Ph.D. (Louisiana State), *Assistant Medical Research Professor of Urology in the Department of Surgery*, 3318 Dixon Road
- Mickey, Paul A. (1970), Th.D. (Princeton), *Associate Professor of Pastoral Theology in the Divinity School*, 2617 McDowell Road
- Miller, Gustavus H. (1955), Ph.D. (Michigan), *Assistant Professor of Romance Languages*, Bartram Drive, Chapel Hill, N.C.
- Miller, John Noel (1975), M.D. (Sydney, Australia), *Associate Professor of Anesthesiology*, 907 Cedar Fork Trail, Chapel Hill, N.C.
- Miller, Joseph Matthew, Jr. (1978), M.D. (Duke), *Assistant Professor of Obstetrics and Gynecology*, 1912 University Drive
- Miller, Lowell S. (1976), M.D. (Duke), *Professor of Radiology*, 6870 Windover Drive
- <sup>144</sup>Miller, Martin A. (1970), Ph.D. (Chicago), *Associate Professor of History*, Apartment 9-1, 1505 Duke University Road
- Miller, Sara Elizabeth (1973), Ph.D. (Georgia), *Assistant Medical Research Professor of Microbiology in the Department of Microbiology and Immunology*, Route 3, Box 212A, Apex, N.C.
- Mills, Elliott (1968), Ph.D. (Columbia), *Associate Professor of Pharmacology and Associate Professor of Physiology*, 122 Dixie Road, Chapel Hill, N.C.
- Mills, Steven Robert (1978), M.D. (North Carolina at Chapel Hill), *Assistant Professor of Radiology*, 613 Greenwood Road, Chapel Hill, N.C.
- Minniear, Wilma A. (1964), M.S.N. (Western Reserve), *Professor of Nursing and Associate Professor of Health Administration*, Route 2, Box 80, Rougemont, N.C.
- <sup>145</sup>Mishler, William Thomas Earle, II (1972), Ph.D. (Duke), *Assistant Professor of Political Science*, 3621 Cole Mill Road
- Mitchell, Thomas G. (1974), Ph.D. (Tulane), *Assistant Professor of Mycology in the Department of Microbiology and Immunology*, 117 West Trinity Avenue
- Modrich, Paul L. (1976), Ph.D. (Stanford), *Assistant Professor of Biochemistry*, 2831 Stuart Drive
- Monroe, Gary Stewart (1978), Ph.D. (Massachusetts), *Assistant Professor of Business Administration*, Apartment D-19, Village Apartments, Carrboro, N.C.
- <sup>146</sup>Monsman, Gerald C. (1965), Ph.D. (Johns Hopkins), *Associate Professor of English*, 2256 Cranford Road

<sup>142</sup>Sabbatical leave, spring 1978-79.

<sup>143</sup>Through 8-31-78.

<sup>144</sup>Sabbatical leave, spring 1978-79; Leave of absence, fall 1978-79.

<sup>145</sup>Through 8-31-78.

<sup>146</sup>Sabbatical leave, spring 1978-79.



- Moore, Ann L.** (1975), M.D. (Missouri), *Assistant Professor of Community and Family Medicine*, Route 2, Box 519, Chapel Hill, N.C.
- Moore, James T.** (1975), M.D. (Missouri), *Assistant Professor of Psychiatry and Assistant Professor of Community and Family Medicine*, Route 2, Box 519, Chapel Hill, N.C.
- <sup>147</sup>**Moore, John Wilson** (1961), Ph.D. (Virginia), *Professor of Physiology*, 2801 Dogwood Road
- Moore, Joseph O.** (1977), M.D. (Johns Hopkins), *Associate in the Department of Medicine*, 2424 Sedgfield Road, Chapel Hill, N.C.
- Moore, Lawrence C., Jr.** (1966), Ph.D. (California Inst. of Tech.), *Associate Professor of Mathematics*, 2116 West Club Boulevard
- Moore, Mary Elizabeth** (1977), M.S.W. (North Carolina at Chapel Hill), *Clinical Associate in Psychiatric Social Work in the Department of Psychiatry*, 1010 Demerius Street
- Moorman, Jane Clark** (1975), M.S.W. (Tulane), *Associate in Psychiatric Social Work in the Department of Psychiatry*, Apartment C-2, 3600 Tremont Drive
- Morey, Richard Carl** (1978), Ph.D. (California at Berkeley), *Professor of Management Sciences in the Graduate School of Business Administration*, 611 Kensington Drive, Chapel Hill, N.C.
- Morgan, Brenda M.** (1974), M.S. (North Carolina at Chapel Hill), *Assistant Professor of Nursing*, 212 James Street, Carrboro, N.C.
- Morgan, Carlisle Lee, Jr.** (1977), M.D. (Miami), Ph.D. (Yale), *Assistant Professor of Radiology*, 516 November Drive
- Morris, James Joseph, Jr.** (1963), M.D. (State Univ. of New York), *Professor of Medicine*, 2810 Chelsea Circle
- Morris, Kenneth Gregory** (1978), M.D. (Ohio State), *Associate in the Department of Medicine*, 3804 Shaftsbury Drive
- Morris, Mary Ann W.** (1977), M.D. (Arkansas), *Associate in the Department of Pediatrics*, Kings Mill Road, Chapel Hill, N.C.
- <sup>148</sup>**Morse, Wayne J.** (1974), Ph.D. (Michigan State Univ.), *Associate Professor of Business Administration*, 114 Social Sciences
- Moses, Montrose J.** (1959), Ph.D. (Columbia), *Professor of Anatomy*, 152 Pinecrest Road
- Most, Ada F.** (1973), Ed.D. (Columbia), *Associate Professor of Nursing*, 201 Monticello Avenue
- Moylan, Joseph A., Jr.** (1975), M.D. (Boston), *Associate Professor of Surgery*, 2211 Chase Street
- <sup>149</sup>**Mueller, Earl George** (1945), Ph.D. (State Univ. of Iowa), *Professor of Art*, 708-D Constitution Drive
- Muga, Bruce J.** (1967), Ph.D. (Illinois), *Professor of Civil Engineering*, 4110 King Charles Road
- Mundy, Donald Ashford** (1978), M.D. (Alberta, Canada), *Associate in the Department of Anesthesiology*, 3508 Manford Drive
- Munning, Katharine Ann** (1978), Ph.D. (The State Univ. of Iowa), *Assistant Professor of Community and Family Medicine*, Apartment 17, 4100 Five Oaks Drive
- <sup>150</sup>**Munoz, Silverio B.** (1977), License (Universidad de Concepcion, Chile), *Visiting Assistant Professor of Romance Languages*, 2404 Bruton Road
- <sup>151</sup>**Murphy, Roland E.** (1967-68; 1971), S.T.D. (Catholic Univ.), *Professor of Old Testament in the Divinity School*, 211 McCauley Street, Chapel Hill, N.C.
- Murray, Francis J.** (1960), Ph.D. (Columbia), *Professor of Mathematics*, 1012 Norwood Avenue
- Murray, Michael Peter** (1978), Ph.D. (Iowa State), *Associate Professor of Policy Sciences*, Route 2, Box 114, Chapel Hill, N.C.
- Murray, William J.** (1972), M.D. (North Carolina at Chapel Hill), Ph.D. (Wisconsin), *Associate Professor of Anesthesiology*, 135 Pinecrest Road
- Myers, Alice C.** (1976), M.S.W. (North Carolina at Chapel Hill), *Associate in Psychiatric Social Work in the Department of Psychiatry*, 2251 Cranford Road
- <sup>152</sup>**Myers, George C.** (1968), Ph.D. (Washington), *Professor of Sociology*, 12 Scott Place
- Myers, Lawrence Edward** (1973-75; 1976), Ph.D. (California at Berkeley), *Assistant Professor of Community and Family Medicine (Biostatistics)*, 2217 Myers Street
- Nadler, Julian Victor** (1978), Ph.D. (Yale), *Assistant Professor of Pharmacology*, A-22 Elizabeth Street, Chapel Hill, N.C.
- <sup>153</sup>**Nagin, Daniel S.** (1976), Ph.D. (Carnegie-Mellon), *Assistant Professor of Policy Sciences*, 2101 West Club Boulevard
- Nash, James Loren** (1972), M.D. (Duke), *Associate Professor of Psychiatry*, 611 Brookview Road, Chapel Hill, N.C.
- Nashold, Blaine S., Jr.** (1957), M.D. (McGill), *Professor of Neurosurgery*, 410 East Forest Hills Boulevard

<sup>147</sup> Sabbatical leave 11-1-78 through 4-30-79.

<sup>148</sup> Through 8-31-78.

<sup>149</sup> Medical leave 9-1-77.

<sup>150</sup> Through 5-31-78.

<sup>151</sup> Leave of absence, spring 1978-79.

<sup>152</sup> Sabbatical leave 1978-79.

<sup>153</sup> Leave of absence 1978-79.



- Nathans, Sydney H. (1966), Ph.D. (Johns Hopkins), *Associate Professor of History*, 1627 Marion Avenue
- Naumann, Dorothy Ethel (1963), M.D. (Syracuse), *Assistant Professor of Community and Family Medicine*, 2404 Tampa Avenue
- Naylor, Aubrey Willard (1952), Ph.D. (Chicago), *James B. Duke Professor of Botany*, 2430 Wrightwood Avenue
- <sup>154</sup> Naylor, Thomas Herbert (1964), Ph.D. (Tulane), *Professor of Economics and Computer Science*, Box 2809, Chapel Hill, N.C.
- Nebes, Robert David (1973), Ph.D. (California Inst. of Tech.), *Assistant Professor of Medical Psychology in the Department of Psychiatry and Lecturer in Psychology*, 3310 Rolling Hill Road
- Neelon, Francis A. (1969), M.D. (Harvard), *Associate Professor of Medicine*, 2216 West Club Boulevard
- <sup>155</sup> Neilson, Robert H. (1975), Ph.D. (Duke), *Assistant Professor of Chemistry*, Apartment B-1, 1422 Wyldewood Road
- Nelius, Sigrid (1973), M.D. (Munich), *Associate in Community and Family Medicine*, P.O. Box 3066
- Nelson, Charles E. (1976), Ph.D. (Ohio University), *Assistant Professor and Research Associate in Physics*, 2708 Heather Glen
- Newborg, Barbara Carol (1952), M.D. (Johns Hopkins), *Assistant Professor of Medicine*, 1503 Virginia Avenue
- Newell, Josephine E. (1975), M.D. (Maryland), *Associate in Community and Family Medicine and Associate in the Department of Radiology*, P.O. Box 68, Bailey, N.C.
- Newsome, Clarence G. (1978), M.Div. (Duke), *Instructor of American Christianity in the Divinity School*, 2 Tara Place
- <sup>156</sup> Newson, Henry Winston (1948), Ph.D. (Chicago), *James B. Duke Professor of Physics*, 1111 North Gregson Street
- <sup>157</sup> Newton, Francis (1967), Ph.D. (North Carolina at Chapel Hill), *Professor of Latin*, 2809 Legion Avenue
- <sup>158</sup> Nicklas, R. Bruce (1965), Ph.D. (Columbia), *Professor of Zoology*, 3101 Camelot Court
- <sup>159</sup> Niechaj, Andrzej Marek (1978), M.D., Ph.D. (Lublin Medical School), *Visiting Associate Professor of Physiology*, Box 3709 Medical Center
- Niedel, James E. (1978), M.D., Ph.D. (Miami), *Associate in the Department of Medicine*, Box 3703 Medical Center
- <sup>160</sup> Niess, Robert J. (1972), Ph.D. (Minnesota), *Professor of Romance Languages*, 2709 Spencer Street
- Nijhout, Herman Frederik (1976), Ph.D. (Harvard), *Assistant Professor of Zoology*, 2952 Welcome Drive
- Noell, Karl Thomas (1974), M.D. (Rochester), *Assistant Professor of Radiology*, 2307 Prince Street
- Nolte, Loren W. (1966), Ph.D. (Michigan), *Professor of Electrical Engineering and Professor of Biomedical Engineering*, 2708 Sevier Street
- <sup>161</sup> Norton, Thomas T. (1972), Ph.D. (California at Los Angeles), *Assistant Professor of Psychology and Assistant Professor of Physiology*, 2708 Augusta Drive
- Novik, Belinda R. (1978), Ph.D. (Michigan State), *Clinical Associate in Medical Psychology in the Department of Psychiatry and Clinical Associate in the Department of Community and Family Medicine*, 5517 Horseshoe Circle
- Nowlin, John B. (1967), M.D. (Duke), *Assistant Professor of Community and Family Medicine*, Apartment 1, 2711 Bedford Street
- Nozaki, Yasuhiko (1966), Ph.D. (Univ. of Tokyo), *Associate in Biochemistry*, 2810 Stuart Drive
- Nygard, Holger Olof (1960), Ph.D. (California at Berkeley), *Professor of English*, 4015 Cole Mill Road
- Oakes, W. Jerry (1978), M.D. (Duke), *Associate in Neurosurgery in the Department of Surgery*, 905 West Maynard Avenue
- Oates, John F. (1967), Ph.D. (Yale), *Professor of Classical Studies*, 2416 Alpine Road
- O'Barr, William M. (1969), Ph.D. (Northwestern), *Associate Professor of Anthropology*, 713 Anderson Street
- Oddson, Terrence A. (1976), M.D. (Texas), *Assistant Professor of Radiology*, 809 Tinkerbell Road, Chapel Hill, N.C.
- Odum, Guy Leary (1943), M.D. (Tulane), *James B. Duke Professor of Neurosurgery*, 2812 Chelsea Circle
- Oehler, Jerri M. (1975), M.S.N. (Med. Coll. of Virginia), *Clinical Associate in Nursing in the Department of Pediatrics and Clinical Instructor in the School of Nursing*, 210 Landsbury Drive
- O'Foghlu, Fearghus T. (1970), Ph.D. (National Univ. of Ireland), *Professor of Radiology and Adjunct Professor of Physics*, 1513 Pincrest Road

<sup>154</sup> Sabbatical leave, spring 1978-79.

<sup>155</sup> Through 8-31-78.

<sup>156</sup> Deceased 5-14-78.

<sup>157</sup> Sabbatical leave 1978-79.

<sup>158</sup> Sabbatical leave, fall 1978-79.

<sup>159</sup> Through 10-20-78.

<sup>160</sup> Sabbatical leave, spring 1978-79.

<sup>161</sup> Through 8-31-78.

- Olanow, Charles Warren (1977), M.D. (Toronto), *Assistant Professor of Medicine (Neurology)*, 3504 Stoneybrook Drive
- Older, Robert A. (1974), M.D. (Duke), *Associate Professor of Radiology*, Route 1, Box 222-E, Hillsborough, N.C.
- Oldham, H. Newland, Jr. (1970), M.D. (Baylor), *Professor of Surgery*, 1020 Homer Street
- O'Quinn, Aglaia N. (1974), M.D. (Duke), *Associate in Pediatrics*, 7001 Holly Drive, Raleigh, N.C.
- Orleans, Carole Tracy (1977), Ph.D. (Maryland), *Assistant Professor of Medical Psychology in the Department of Psychiatry*, 1016 Gloria Avenue
- Osborn, Robert Tappan (1954), Ph.D. (Drew), *Professor of Religion*, 2732 McDowell Road
- Osborne, Dennis Richard Selwyn (1978), M.B. (Otago University), *Assistant Professor of Radiology*, Apartment 176-A, 2518 Millwood Court, Chapel Hill, N.C.
- Osofsky, Stephen Gary (1977), M.D. (Northwestern), *Assistant Professor of Pediatrics*, 101 Mosswood Court, Chapel Hill, N.C.
- Osterhout, Shirley Kirkman (1967), M.D. (Duke), *Assistant Professor of Pediatrics*, 5133 North Willowhaven Drive
- Osterhout, Suydam (1959), M.D. (Duke), Ph.D. (Rockefeller Inst.), *Professor of Microbiology and Professor of Medicine*, 5133 North Willowhaven Drive
- Osuna, Rafael (1977), Ph.D. (Brown), *Professor of Romance Languages*, 2647 Umstead Road
- Ottolenghi, Athos (1959), M.D. (Univ. of Pavia, Italy), *Professor of Pharmacology*, 1510 Woodburn Road
- Owen, Bruce M. (1978), Ph.D. (Stanford), *Associate Professor of Business Administration*, 430 Lakeshore Lane, Chapel Hill, N.C.
- Owen, Harry Ashton, Jr. (1951), Ph.D. (North Carolina State), *Professor of Electrical Engineering*, 2741 McDowell Road
- Ownby, Dennis Randall (1977), M.D. (Med. Coll. of Ohio), *Assistant Professor of Pediatrics*, 2219 Monthaven Drive
- Padilla, George M. (1965), Ph.D. (California at Los Angeles), *Associate Professor of Physiology*, 3510 Donnigale Avenue
- <sup>162</sup>Paletz, David L. (1967), Ph.D. (California at Los Angeles), *Associate Professor of Political Science*, 1311 Carolina Avenue
- <sup>163</sup>Palmer, Aubrey Edwin (1944), C.E. (Virginia), *Associate Professor of Civil Engineering*, 2525 Highland Avenue
- Palmer, Richard A. (1966), Ph.D. (Illinois), *Professor of Chemistry*, 126 Pinecrest Road
- Palmer, Richard Geoffrey (1977), Ph.D. (Cambridge), *Assistant Professor of Physics*, Apartment H-6, 3600 Tremont Drive
- Palmore, Erdman B. (1967), Ph.D. (Columbia), *Professor of Medical Sociology in the Department of Psychiatry and Professor of Sociology*, 19 Scott Place
- Pardon, William (1977), Ph.D. (Princeton), *Assistant Professor of Mathematics*, Apartment 204, 312 North Buchanan Boulevard
- Parham, Betty B. (1977), M.S.W. (Smith College), *Clinical Associate in Psychiatric Social Work in the Department of Psychiatry*, Route 5, Box 241, Roxboro, N.C.
- Parker, Joseph B., Jr. (1953-59; 1970), M.D. (Tennessee), *Professor of Psychiatry*, 24 Stoneridge
- Parker, Roy T. (1954), M.D. (Med. Coll. of Virginia), *F. Bayard Carter Professor of Obstetrics and Gynecology*, 111 Pinecrest Road
- Parkerson, George R., Jr. (1974), M.D. (Duke), *Assistant Professor of Community and Family Medicine*, 4040 Nottaway Road
- Parmentier, James L. (1977), Ph.D. (California at Santa Barbara), *Assistant Medical Research Professor of Anesthesiology*, 1910 Glendale Avenue
- <sup>164</sup>Partin, Harry B. (1964), Ph.D. (Chicago), *Associate Professor of Religion*, 2739 Spencer Street
- Pascal, Joel Francis (1954), Ph.D. (Princeton), *Professor of Law*, 1527 Pinecrest Road
- Patrick, Merrill Lee (1964), Ph.D. (Carnegie Inst. of Tech.), *Professor of Computer Science*, 25 Scott Place
- Pauk, Z. Daniel (1967), M.D. (Iowa), *Assistant Professor of Psychiatry*, 1802 Woodburn Road
- Paul, Robert G. (1970), Ph.D. (Oklahoma), *Associate in Audiology and Speech Pathology in the Department of Surgery*, 2318 Huron Street
- Paulson, David F. (1972), M.D. (Duke), *Associate Professor of Urology in the Department of Surgery*, 3911 Plymouth Road
- Payne, Bruce L. (1972), M.A. (Yale), *Lecturer in Policy Sciences*, 2116 Englewood Avenue
- Payne, John William (1977), Ph.D. (California at Irvine), *Associate Professor of Business Administration*, 102 Mosswood Court, Chapel Hill, N.C.
- Peach, William Bernard (1951), Ph.D. (Harvard), *Professor of Philosophy*, 706-F Constitution Drive
- Pearsall, George W. (1964), Sc.D. (Massachusetts Inst. of Tech.), *Professor of Materials Science*, 2941 Welcome Drive

<sup>162</sup> Leave of Absence 1978-79.

<sup>163</sup> Sabbatical leave, spring 1977-78.

<sup>164</sup> Sabbatical leave, spring 1978-79.

- <sup>165</sup> Peele, Talmadge Lee (1939), M.D. (Duke), *Professor of Anatomy, Professor of Medicine (Neurology), and Assistant Professor of Pediatrics*, KD2 University Apartments
- Peete, Charles Henry, Jr. (1953), M.D. (Harvard), *Professor of Obstetrics and Gynecology*, 42 Beverly Drive
- Peete, William P. J. (1955), M.D. (Harvard), *Professor of Surgery*, 2814 Chelsea Circle
- Pepe, Peter Francis (1972), M.D. (Temple), *Associate Professor of Medicine*, 320 Glendale Drive, Chapel Hill, N.C.
- Perez, Gustavo Francisco (1978), Ph.D. (Michigan), *Instructor in Romance Languages*, 10-H Stratford Hills Apartments, Chapel Hill, N.C.
- Perkins, Ronald (1968), Ph.D. (Indiana), *Professor of Geology*, 2719 Montgomery Street
- Persons, Walter Scott (1930), A.B. (Duke), *Associate Professor of Physical Education*, 612 Swift Avenue
- <sup>166</sup> Peschel, John L. (1978), J.D. (Michigan), *Visiting Professor of Law*, 1708 Curtis Road, Chapel Hill, N.C.
- Pessar, Patricia Ruth (1977), Ph.D. (Chicago), *Assistant Professor of Anthropology*, Apartment H-1, 2106 Front Street
- Peter, Robert Hatton (1967), M.D. (Duke), *Associate Professor of Medicine*, 2710 McDowell Road
- <sup>167</sup> Peters, Calvin R. (1975), M.D. (Louisiana State), *Assistant Professor of Plastic and Maxillofacial Surgery*, 3519 Barcelona Avenue
- Peterson, David W. (1973), Ph.D. (Stanford), *Professor of Management Sciences in the Graduate School of Business Administration*, 1013 Monmouth Avenue
- Peterson, Eric W. (1976), M.D. (Duke), *Clinical Associate in the Department of Psychiatry*, 60 Fox Chase Road, West, Asheville, N.C.
- <sup>168</sup> Petty, Olan Lee (1952), Ph.D. (Iowa), *Professor of Education*, Breton Place
- Pfeiffer, John Bernard, Jr. (1949), M.D. (Cornell), *Professor of Medicine*, 3414 Rugby Road
- Phelps, Leland R. (1961), Ph.D. (Ohio State), *Professor of Germanic Languages and Literature*, 2255 Cranford Road
- Philpott, Jane (1951), Ph.D. (Iowa), *Professor of Botany and Professor of Wood Anatomy, School of Forestry and Environmental Studies*, 2260 Cranford Road
- Pickett, John E. Phillip (1970) *Associate in Pathology and Instructor in the Medical Technology Program*, 3323 Pinafore Drive
- Pickrell, Kenneth LeRoy (1944), M.D. (Johns Hopkins), *Professor of Plastic and Maxillofacial Surgery*, 3 Sylvan Road
- Pilkey, Orrin H. (1965), Ph.D. (Florida State), *Professor of Geology*, Route 4, Box 426, Hillsborough, N.C.
- Pilkington, Theo Clyde (1961), Ph.D. (Duke), *Professor of Biomedical Engineering and Professor of Electrical Engineering*, 2932 Ridge Road
- Pinnell, Sheldon Richard (1973), M.D. (Yale), *Professor of Medicine (Dermatology)*, 2815 Chelsea Circle
- Pisetsky, David Stephen (1978), Ph.D., M.D. (Albert Einstein Coll. of Med.), *Assistant Professor of Medicine*, 1601 Hermitage Court
- Pittillo, Robert A., Jr. (1968), Ed.D. (Duke), *Associate Professor of Education*, 2735 Montgomery Street
- Pizzo, Salvatore V. (1976), Ph.D., M.D. (Duke), *Assistant Professor of Pathology and Assistant Professor of Biochemistry*, 3314 Mossdale Avenue
- Poirier, Jacques C. (1955), Ph.D. (Chicago), *Professor of Chemistry*, 210 West Lavender Avenue
- Porter, Ned A. (1969), Ph.D. (Harvard), *Associate Professor of Chemistry*, 1009 Archdale Drive
- Portes, Alejandro (1975), Ph.D. (Wisconsin), *Professor of Sociology*, 2322 Dawn Trail
- Portwood, Richard M. (1959), M.D. (Southwestern), *Assistant Professor of Medicine*, 54 Beverly Drive
- Postlethwait, Raymond W. (1955), M.D. (Duke), *Professor of Surgery*, 143 Pinecrest Road
- Poteat, William Hardman (1960), Ph.D. (Duke), *Professor of Religion and Comparative Studies*, 621 Greenwood Road, Chapel Hill, N.C.
- <sup>169</sup> Poth, Phillip W. (1977), M.D. (Tulane), *Associate in the Department of Medicine*, 113 Landsbury Drive
- Potts, Leo (1973), M.B. (Adelaide, South Australia), *Assistant Professor of Psychiatry*, 12 Horizon Hill, Asheville, N.C.
- Pratt, Philip C. (1966), M.D. (Johns Hopkins), *Professor of Pathology*, 2707 Sevier Street
- Pratt, Vernon G. (1964), M.F.A. (San Francisco Art Institute), *Assistant Professor of Art*, 416 West Markham Avenue
- <sup>170</sup> Pratt, Walter F. (1978), D.Phil (Oxford), J.D. (Yale), *Assistant Professor of Law*, 921 Monmouth Avenue
- <sup>171</sup> Predmore, Richard Lionel (1950), D.M.L. (Middlebury), *Professor of Romance Languages*, 7 Glenmore Drive
- Preiss, Jack J. (1959), Ph.D. (Michigan State), *Professor of Sociology*, 2722 McDowell Road

<sup>165</sup> Retired 8-31-78.

<sup>166</sup> Through 5-31-78.

<sup>167</sup> Through 6-30-78.

<sup>168</sup> Retired 8-31-78.

<sup>169</sup> Through 6-30-78.

<sup>170</sup> Leave of absence 7-1-78 through 6-30-79.

<sup>171</sup> Retired 2-28-78.



- Preissig, Sandra H. (1977), M.D. (Tennessee), *Assistant Professor of Pathology*, 4028 Livingstone Place
- Preston, Richard A. (1965), Ph.D. (Yale), *William K. Boyd Professor of History*, 1124 Woodburn Road
- Price, David E. (1973), Ph.D. (Yale), *Associate Professor of Political Science and Policy Sciences*, 106 Collums Road, Chapel Hill, N.C.
- Price, E. Reynolds (1958), B.Litt. (Oxford), *James B. Duke Professor of English*, Box 4813, Duke Station
- Price, James Ligon, Jr. (1952), Ph.D. (Cambridge), *Professor of Religion*, 2723 Circle Drive
- Price, Mary Kathleen (1975), J.D. (Illinois), *Associate Professor of Law*, 2222 West Club Boulevard
- Pritchett, Edward L. C. (1976), M.D. (Ohio State), *Assistant Professor of Medicine*, 116 Pinecrest Road
- Prokop, Charles Kent (1978), Ph.D. (Texas Technical University), *Assistant Professor of Medical Psychology in the Department of Psychiatry*, 18 Howland Road, Asheville, N.C.
- <sup>172</sup>Protter, Philip E. (1975), Ph.D. (California at San Diego), *Assistant Professor of Mathematics*, Apartment O, 1700 Pace Street
- <sup>173</sup>Prunty, Bert S. (1978), J.D. (Drake), *Visiting Professor of Law*, Cape Elizabeth, Maine
- Pupkin, Marcos J. (1974), M.D. (Univ. of Chile), *Associate Professor of Obstetrics and Gynecology*, 4518 Cheshire Court
- Putman, Charles E. (1977), M.D. (Texas), *Professor of Radiology*, 17 Brisbane Drive, Chapel Hill, N.C.
- Pye, A. Kenneth (1966), LL.M. (Georgetown), *Professor of Law*, 2802 Chelsea Circle
- Quarfordt, Steven H. (1968), M.D. (New York Univ.), *Associate Professor of Medicine*, 3300 Pinafore Drive
- Quigley, Martin Mark (1978), M.D. (Georgetown), *Associate in the Department of Obstetrics and Gynecology*, 6609 Chantilly Place, Bahama, N.C.
- <sup>174</sup>Quin, Louis D. (1957), Ph.D. (North Carolina at Chapel Hill), *Professor of Chemistry*, 2740 McDowell Road
- Quinn, Galen W. (1958), D.D.S. (Tennessee), *Professor of Orthodontics*, 806 East Forest Hills Boulevard
- Quinn, Naomi R. Ph.D. (Stanford), *Associate Professor of Anthropology*, 710 Overhill Terrace
- Raitt, Jill (1973), Ph.D. (Chicago), *Associate Professor of Historical Theology in the Divinity School*, 3213 Pickett Road
- Rajagopal, R. (1974), Ph.D. (Michigan), *Assistant Professor of Quantitative Science, School of Forestry and Environmental Studies*, 3824 Hillgrand Drive
- Rajagopalan, K. V. (1966), Ph.D. (Madras), *Professor of Biochemistry*, 2214 Elmwood Avenue
- Ralston, Charles William (1954), Ph.D. (Duke), *Professor of Forest Soils*, 2531 Wrightwood Avenue
- Ramm, Dietolf (1969), Ph.D. (Duke), *Associate Medical Research Professor in the Department of Psychiatry and Part-time Lecturer in Computer Science*, 3538 Hamstead Court
- Ramon, Fidel (1974), Ph.D. (Duke), *Assistant Professor of Physiology*, 1407 Arnette Avenue
- Ramus, Joseph Stephen (1978), Ph.D. (California at Berkeley), *Assistant Professor of Botany*, General Delivery, Marshallberg, N.C.
- Randall, Dale B. J. (1957), Ph.D. (Pennsylvania), *Professor of English*, 2620 University Drive
- Rankin, Sally Heller (1978), M.S.N. (Duke), *Instructor in Nursing*, 2803 Nation Avenue
- Raschke, Manfred G. (1975), B.A. (Toronto, Canada), *Instructor in Classical Studies*, Apartment 27-L, 2752 Middleton Street
- Rausher, Mark D. (1978), Ph.D. (Cornell), *Assistant Professor of Zoology*, 317 West Trinity Avenue
- Ravin, Carl Eric (1978), M.D. (Cornell), *Associate Professor of Radiology*, 21 Heath Place
- Raynor, Calla Ann (1962), M.A.T. (North Carolina at Chapel Hill), *Assistant Professor of Physical Education*, 858 Louise Circle
- Reardon, Kenneth James (1947), M.A. (Boston) *Associate Professor of English*, 2511 Winton Road
- Reddy, William Mathew (1977), Ph.D. (Chicago), *Visiting Assistant Professor of History*, Apartment B, 2304 Pratt Street
- Redick, Lloyd F. (1974), M.D. (Ohio State), *Professor of Anesthesiology*, Box 277C, Route 7, Lakeside Drive
- Reed, James C. (1976), M.D. (Miami), *Associate Professor of Radiology*, 608 Croom Court, Chapel Hill, N.C.
- <sup>175</sup>Reed, John William (1970), M.D. (Bowman Gray), *Associate Professor of Ophthalmology*, 3212 Cromwell Road
- Reed, Michael C. (1974), Ph.D. (Stanford), *Professor of Mathematics*, Apartment 106, 1008½ Gloria Avenue
- <sup>176</sup>Reedy, Michael K. (1969), M.D. (Washington), *Associate Professor of Anatomy*, 2119 West Club Boulevard
- Reimer, Keith Arnold (1975), Ph.D., M.D. (Northwestern), *Assistant Professor of Pathology*, Route 7, Box 215, Timberly Drive

<sup>172</sup>Through 8-31-78.

<sup>173</sup>Through 11-30-78.

<sup>174</sup>Sabbatical leave, spring 1978-79.

<sup>175</sup>Through 3-31-78.

<sup>176</sup>Sabbatical leave 8-1-78 through 6-30-79.



- Reisner, Emily G. (1973), Ph.D. (Case Western Reserve), *Assistant Medical Research Professor of Immunology in the Department of Microbiology and Immunology and Medical Research Associate in the Department of Medicine*, 2834 Stuart Drive
- <sup>177</sup>Reiss, Edmund A. (1967), Ph.D. (Harvard), *Professor of English*, Route 3, Box 187
- Rembert, Judith Caroline (1978), Ph.D. (North Carolina at Chapel Hill), *Assistant Medical Research Professor of Medicine*, 2817 Sparger Road
- Reppy, William A., Jr. (1971), J.D. (Stanford), *Professor of Law*, 604 Laurel Hill Road, Chapel Hill, N.C.
- Reynolds, Jacqueline A. (1969), Ph.D. (Washington), *Associate Professor of Biochemistry*, 1430 North Mangum Street
- <sup>178</sup>Reznick, Bruce A. (1976), Ph.D. (Stanford), *Assistant Professor of Mathematics*, 217-B Physics
- Rhoads, John McFarlane (1956), M.D. (Temple), *Professor of Psychiatry and Lecturer in Pastoral Care in the Divinity School*, 2404 Prince Street
- Rice, John Russell (1976), M.D. (Miami, Florida), *Assistant Professor of Medicine*, 4109 Deepwood Circle
- Rice, Reed P. (1965), M.D. (Indiana), *Professor of Radiology*, 800 Cedar Falls Road
- Rice, Willy Earl (1974), Ph.D. (North Carolina at Chapel Hill), *Assistant Professor of Sociology*, 500 Umstead Drive, Apartment 204-D, Chapel Hill, N.C.
- Richards, John F. (1977), Ph.D. (California at Berkeley), *Associate Professor of History*, 1012 Gloria Avenue
- Richardson, Curtis John (1977), Ph.D. (Tennessee), *Associate Professor of Resource Ecology in the School of Forestry and Environmental Studies*, 717 Anderson Street
- Richardson, David C. (1969), Ph.D. (Massachusetts Inst. of Tech.), *Associate Professor of Biochemistry*, 213 Nanaline H. Duke Bldg.
- Richardson, Jane Shelby (1970), M.A.T. (Harvard), *Associate in Anatomy*, 213 Nanaline H. Duke Bldg.
- Richardson, Lawrence, Jr. (1966), Ph.D. (Yale), *James B. Duke Professor of Latin*, 1103 North Gregson Street
- Richey, McMurry S. (1954), B.D., Ph.D. (Duke), *Professor of Theology and Christian Nurture in the Divinity School*, 2725 Dogwood Road
- Riebel, John D. (1962), M.A. (Duke), *Associate Professor of Physical Education*, 60 Oakwood Drive, Chapel Hill, N.C.
- Riffle, Kathryn Louise (1978), Ph.D. (New York), *Associate Professor of Nursing*, Apartment 7-G, 200 Seven Oaks Road
- Rigsby, Kent J. (1971), Society of Fellows (Harvard), *Associate Professor of Classical Studies*, 1006 Minerva Avenue
- Riordan, Mary Ellen (1978), M.S. (Wisconsin), *Assistant Clinical Professor of Physical Therapy*, 721 Ravel Street, Raleigh, N.C.
- Ripley, Dana Phelps (1959), Ph.D. (North Carolina at Chapel Hill), *Associate Professor of Romance Languages*, 3603 West Cornwallis Road
- <sup>179</sup>Ripley, Godfrey D. (1976), M.D. (London), *Assistant Clinical Professor of Community and Family Medicine*, Apartment 104, 3547 Mayfair Street
- Riski, John Edward (1978), Ph.D. (Florida), *Assistant Professor of Speech Pathology in the Department of Surgery*, 3201 Mossdale Avenue
- Robbins, James C. (1977), B.S.E.E. (Purdue), *Visiting Assistant Professor of Naval Science*, 3485 Hope Valley Road
- Roberson, Nathan Russell, Jr. (1963), Ph.D. (Johns Hopkins), *Professor of Physics*, 3406 Ogburn Court
- Roberts, George W. (1971), Ph.D. (Cambridge), *Associate Professor of Philosophy*, 2706 Montgomery Street
- Roberts, Judith Mary (1977), M.S.N. (Vanderbilt), *Instructor in Nursing and Clinical Instructor in the Department of Community and Family Medicine*, 2527 Rickey Circle, Raleigh, N.C.
- Robertson, Horace B., Jr. (1976), J.D. (Georgetown), *Professor of Law*, 5 Stoneridge Circle
- <sup>180</sup>Robertson, J. David (1966), M.D. (Harvard), Ph.D. (Massachusetts Inst. of Tech.), *James B. Duke Professor of Anatomy*, 32 Oak Drive
- Robinson, Charles K. (1961), Ph.D. (Duke), *Associate Professor of Philosophical Theology in the Divinity School*, 129 Wilkins Drive
- Robinson, Donald J., II (1978), M.S. (Arkansas), *Visiting Assistant Professor of Naval Science*, 4124 Cobblestone Drive
- Robinson, George M. (1971), Ph.D. (Chicago), *Assistant Professor of Psychology*, 2431 Alpine Road
- Robinson, Hugh G. (1964), Ph.D. (Duke), *Professor of Physics*, 2749 McDowell Road

<sup>177</sup>Sabbatical leave, fall 1978-79.

<sup>178</sup>Leave of absence 1978-79.

<sup>179</sup>Through 8-4-78.

<sup>180</sup>Sabbatical leave 10-1-78 through 9-30-79.

- Robinson, Roscoe R. (1962), M.D. (Oklahoma), *Florence McAlister Professor of Medicine*, 3929 Nottaway Road
- Robinson, Stuart Fleetwood (1978), M.D. (Duke), *Associate in the Department of Medicine*, Apartment 51-C, 311 South LaSalle Street
- Roche, James Kenneth (1977), M.D. (Pennsylvania), *Assistant Professor of Medicine*, 131 Pinecrest Road
- Rockwell, William James Kenneth (1968), M.D. (Duke), *Assistant Professor of Psychiatry*, 3318 Devon Road
- Roe, Charles R. (1969), M.D. (Duke), *Associate Professor of Pediatrics*, 1409 Colewood Drive
- <sup>181</sup>Rogowski, Ronald L. (1975), Ph.D. (Princeton), *Associate Professor of Political Science*, 924 Urban Avenue
- Rohler, Lloyd Earl, Jr. (1977), Ph.D. (Indiana), *Assistant Professor of English*, 2201 University Drive
- Rolleston, James (1975), Ph.D. (Yale), *Associate Professor of Germanic Languages and Literature*, 3238 Pickett Road
- Romm, Frederic J. (1978), M.D. (Harvard), *Assistant Professor of Community and Family Medicine*, 1404 Arnette Avenue
- Ropp, Theodore (1938), Ph.D. (Harvard), *Professor of History*, 302 East Woodridge Drive
- Rosati, Robert A. (1971), M.D. (Duke), *Associate Professor of Medicine and Associate in Community and Family Medicine*, 5918 Craig Road
- Rosen, Beverly K. (1974), M.S.W. (North Carolina at Chapel Hill), *Associate in Community and Family Medicine*, 403 Knob Court, Chapel Hill, N.C.
- Rosen, Gerald M. (1972), Ph.D. (Clarkson Coll. of Tech.), *Associate Professor of Pharmacology*, 403 Knob Court, Chapel Hill, N.C.
- Rosenberg, Donald K. (1976), Ph.D. (Ohio State), *Assistant Professor of Germanic Languages and Literature*, 919 Monmouth Avenue
- <sup>182</sup>Rosenberg, Stanley J. (1975), M.D. (Michigan), *Assistant Professor of Anesthesiology*, 2713 Circle Drive
- Rosendahl, Bruce R. (1976), Ph.D. (California at San Diego), *Assistant Professor of Geology*, 1328 Clermont Road
- Roses, Allen David (1970), M.D. (Pennsylvania), *Associate Professor of Medicine (Neurology) and Assistant Professor of Biochemistry*, 2964 Friendship Road
- Ross, David J. (1972), Ph.D. (Stanford), *Assistant Professor of Philosophy*, Apartment 29-D, 2752 Middleton Street
- Ross, Norman F. (1937), D.D.S. (Temple), *Associate Professor of Dentistry*, 2811 Chelsea Circle
- Rosse, Wendell F. (1966), M.D. (Chicago), *Professor of Medicine and Professor of Immunology*, Route 7, Box 223, Timberly Drive
- <sup>183</sup>Rossell, Christine Hamilton (1977), Ph.D. (Southern California), *Visiting Assistant Professor of Policy Sciences*, 2822 Erwin Road
- Roth, Susan (1973), Ph.D. (Northwestern), *Assistant Professor of Psychology*, 2741 Spencer Street
- Rothman, Stanley Jess (1977), M.D. (McGill), *Assistant Professor of Pediatrics and Assistant Professor of Medicine (Neurology)*, 2548 Booker Creek Road, Chapel Hill, N.C.
- Rourk, Malcolm Henderson, Jr. (1971), M.D. (Pennsylvania), *Assistant Professor of Pediatrics and Assistant Professor of Community and Family Medicine*, 808 Wells Street
- Rowe, Thomas D., Jr. (1975), J.D. (Harvard), *Associate Professor of Law*, 712-D Constitution Drive
- <sup>184</sup>Roy, Donald Francis (1950), Ph.D. (Chicago), *Professor of Sociology*, 604 North Gregson Street
- Royer, Jack (1978), M.S. (American University), *Instructor and Research Associate in Forestry and Environmental Studies*, 5508 Wescott Place
- Rubin, David Charles (1978), Ph.D. (Harvard), *Assistant Professor of Psychology*, 702 Chalice Street
- Ruderman, Robert J. (1976), M.D. (Rochester), *Assistant Professor of Orthopaedic Surgery and Associate in Pediatrics*, 3612 Alman Drive
- Rundles, Ralph Wayne (1945), Ph.D. (Cornell), M.D. (Duke), *Professor of Medicine*, 3608 Westover Road
- Ryals, Clyde de Loache (1973), Ph.D. (Pennsylvania), *Professor of English*, 1620 University Drive
- Sabiston, David Coston, Jr. (1964), M.D. (Johns Hopkins), *James J. Duke Professor of Surgery*, 1528 Pinecrest Road
- Sagberg, Anne E. (1956), M.D. (Onslow), *Assistant Clinical Professor of Psychiatry*, Highland Hospital, Asheville, N.C.
- Sage, Harvey J. (1964), Ph.D. (Yale), *Associate Professor of Biochemistry and Associate Professor of Immunology*, 2960 Welcome Drive
- <sup>185</sup>Salamon, Lester M. (1973), Ph.D. (Harvard), *Associate Professor of Political Science and Associate Professor of Policy Sciences*, 214 Perkins Library

<sup>181</sup>Sabbatical leave, spring 1978-79.

<sup>182</sup>Through 3-31-78.

<sup>183</sup>Through 8-31-78.

<sup>184</sup>Sabbatical leave, fall 1978-79.

<sup>185</sup>Leave of absence 9-1-77 through 8-31-79.

- Salber, Eva J. (1971), M.D. (Univ. of Cape Town, South Africa), *Professor of Community and Family Medicine*, 1308 Arboretum Drive, Chapel Hill, N.C.
- Saltzman, Herbert A. (1958), M.D. (Philadelphia), *Professor of Medicine*, 2728 McDowell Road
- Salzano, John V. (1958), Ph.D. (Iowa State), *Professor of Physiology*, 409 Clarion Drive
- Sanders, Aaron P. (1956), Ph.D. (North Carolina at Chapel Hill), *Professor of Radiology*, 1017 Snow Hill Road, Bahama, N.C.
- Sanford, David H. (1970), Ph.D. (Cornell), *Professor of Philosophy*, 2227 Cranford Road
- Sather, Randall Kenneth (1978), M.D. (Med. Coll. of Georgia), *Assistant Professor of Radiology*, 206 North Boundary Street, Chapel Hill, N.C.
- <sup>186</sup>Saville, Eugenia Curtis (1947), M.A. (Columbia), *Associate Professor of Music*, 1103 Anderson Street
- <sup>187</sup>Saville, Lloyd Blackstone (1946), Ph.D. (Columbia), *Professor of Economics*, 1103 Anderson Street
- Sawyer, Robert N. (1976), Ed.D. (Wyoming), *Associate Professor of Education*, 4600 Berini Drive
- Sayner, Nancy C. (1977), D.N.S. (San Francisco at California), *Associate Professor of Nursing*, Route 4, Box 661, Hillsborough, N.C.
- Schachat, Frederick H. (1978), Ph.D. (Stanford), *Assistant Professor of Anatomy*, Apartment 10, 211 Pinegate Circle, Chapel Hill, N.C.
- Schaeffer, David George (1978), Ph.D. (Massachusetts Institute of Technology), *Professor of Mathematics*, 1007 Lakewood Avenue
- Schafer, Sally Ann (1975), M.S.N. (Case Western Reserve), *Assistant Professor of Nursing*, Apartment 104-C, 2920 Chapel Hill Road
- Schanberg, Saul M. (1967), Ph.D., M.D. (Yale), *Professor of Pharmacology and Assistant Professor of Neurology*, 1604 Pinecrest Road
- Schechter, Eric (1978), Ph.D. (Chicago), *Assistant Professor of Mathematics*, Apartment 304, 312 North Buchanan Boulevard
- <sup>188</sup>Schneider, James H. (1975), Ph.D. (Ohio State), *Assistant Professor of Business Administration*, 3108 Hope Valley Road
- Schenk, Katherine N. (1972), Ed.D. (Florida), *Associate Professor of Nursing*, 60 Veterans Drive, Asheville, N.C.
- <sup>189</sup>Schiffman, Harold (1924), Ph.D. (Princeton), *Professor of Psychology*, 3010 Oxford Drive
- Schiffman, Susan S. (1972), Ph.D. (Duke), *Associate Professor of Medical Psychology in the Department of Psychiatry and Lecturer in Psychology*, 18 Heath Place
- Schmidt, Margaret C. (1974), M.A. (Louisville), *Associate in Pathology*, 5814 Scalybark Road
- Schmidt-Nielsen, Knut (1952), Dr. Phil. (Copenhagen), *James B. Duke Professor of Physiology in the Department of Zoology*, c/o Zoology Department
- Schneider, Kenneth A. (1976), M.D. (Northwestern), *Professor of Pathology*, Route 6, Box 148, Chapel Hill, N.C.
- Schoenfelder, Carol Anne (1978), Ph.D. (North Carolina at Chapel Hill), *Visiting Assistant Professor of Mathematics*, 1320-3 Ephesus Church Road, Chapel Hill, N.C.
- Schold, Stanley Clifford, Jr. (1978), M.D. (Arizona), *Assistant Professor of Medicine (Neurology)*, 2435 Tilghman Circle, Chapel Hill, N.C.
- Schomburg, David W. (1968), Ph.D. (Purdue), *Associate Professor of Obstetrics and Gynecology and Associate Professor of Physiology*, Route 1, Box 304-A, Hillsborough, N.C.
- Schwartz, Michael (1976), B.A. (Middlebury College), *Instructor in English*, Box 6176 College Station
- Schweizer, Rudolph Conrad (1978), Ph.D. (Duke), *Instructor and Research Associate in Physics*, Apartment B-1, 3600 Tremont Drive
- Scott, Anne Firor (1961), Ph.D. (Radcliffe), *Professor of History*, 1028 Highland Woods, Chapel Hill, N.C.
- Scott, David William (1971), Ph.D. (Yale), *Associate Professor of Microbiology and Immunology*, 3203 Winfield Drive
- Scott, Jean A. (1974), Ph.D. (Harvard), *Assistant Professor of History*, Apartment I-28, 2752 Middleton Street
- Scott, William Evans (1958), Ph.D. (Yale), *Professor of History*, 3064-C Colony Road
- Scoville, Richard A. (1961), Ph.D. (Yale), *Associate Professor of Mathematics*, 2313 West Club Boulevard
- Scullin, Daniel C., Jr. (1974), M.D. (Ohio State), *Associate in Medicine*, 5 Pine Tree Lane, Route 2, Chapel Hill, N.C.
- Seaber, Judy Harrington (1969), B.A. (Emory), *Assistant Clinical Professor of Ophthalmology*, Richmond Downs Farm, Hillsborough, N.C.
- Sealy, Will Camp (1946), M.D. (Emory), *Professor of Thoracic Surgery*, 2232 Cranford Road
- Searles, Richard B. (1965), Ph.D. (California at Berkeley), *Associate Professor of Botany*, 1800 Woodburn Road

<sup>186</sup>Sabbatical leave, fall 1978-79; Leave of absence, spring 1978-79.

<sup>187</sup>Leave of absence 1978-79.

<sup>188</sup>Through 8-31-78.

<sup>189</sup>Sabbatical leave, spring 1978-79.



- Sedor, Frank Alexander (1978), Ph.D. (Florida), *Assistant Professor of Pathology*, 15-H Booker Creek Apartments, Chapel Hill, N.C.
- Sedwick, W. David (1976), Ph.D. (Pennsylvania), *Assistant Medical Research Professor of Medicine and Assistant Medical Research Professor of Microbiology*, 3805 Westcrest Drive
- Seebass, Tilman Otto Robert (1977), Ph.D. (Basel, Switzerland), *Assistant Professor of Music*, 2016 West Club Boulevard
- Seigler, Hilliard Foster (1967), M.D. (North Carolina at Chapel Hill), *Professor of Surgery and Associate Professor of Immunology*, 4006 King Charles Road
- Selman, Richard D. (1976), M.D. (Emory), *Associate in Psychiatry*, 51 Audubon Drive, Asheville, N.C.
- Semans, James Hustead (1953), M.D. (Johns Hopkins), *Professor of Urology*, 1415 Bivins Street
- Serafin, Donald (1974), M.D. (Duke), *Associate Professor of Plastic and Maxillofacial Surgery*, 824 Anderson Street
- Serwer, Gerald A. (1974), M.D. (Duke), *Assistant Professor of Pediatrics*, 2801 Welcome Drive
- Severns, Catherine M. (1971), Certificate in Nursing (Yale), *Associate in the Department of Community and Family Medicine*, 2106 Woodrow Street
- Seyler, Suzanne M. (1976), M.S. (Wisconsin), *Assistant Professor of Nursing*, 2221 Thunder Road
- Shand, David Gordon (1978), Ph.D., M.D. (London University), *Professor of Pharmacology and Professor of Medicine*, 11 Cotswold Place
- Sharon, Boaz (1976), M.M. (Boston), *Pianist-in-Residence and Lecturer in Music*, Apartment B-2, 812 Green Street
- Shaughnessy, Edward J., Jr. (1975), Ph.D. (Virginia), *Assistant Professor of Mechanical Engineering*, 805 Duluth Street
- Shaw, Barbara Ramsay (1975), Ph.D. (Washington), *Assistant Professor of Chemistry*, 14 Forest Ridge Place
- Shearin, Jacob Connell, Jr. (1978), M.D. (Pennsylvania), *Assistant Professor of Plastic and Maxillofacial Surgery in the Department of Surgery*, 3403 Rolling Hill Road
- Shelburne, John D. (1973), Ph.D. (Duke), *Associate Professor of Pathology*, 4302 Malvern Road
- Shepard, Marion L. (1967), Ph.D. (Iowa State), *Associate Professor of Materials Science*, 3421 Pinafore Drive
- Shields, M. Bruce (1974), M.D. (Oklahoma Univ.), *Assistant Professor of Ophthalmology*, 2713 Spencer Street
- Shimm, Melvin G. (1953), LL.B. (Yale), *Professor of Law*, 2429 Wrightwood Avenue
- Shingleton, William Warner (1947), M.D. (Bowman Gray), *Professor of Surgery*, 3866 Somerset Drive
- Shipley, Robert H. (1977), Ph.D. (Iowa), *Assistant Professor of Medical Psychology in the Department of Psychiatry*, 212 May Court, Chapel Hill, N.C.
- Shoenfield, Joseph Robert (1952), Ph.D. (Michigan), *Professor of Mathematics*, Apartment 105, 3525 Mayfair Street
- Shows, William Derek (1967), Ph.D. (Duke), *Associate Professor of Medical Psychology in the Department of Psychiatry and Lecturer in Religion*, 2824 McDowell Road
- Shrivastav, Brij B. (1974), Ph.D. (Western Ontario, Canada), *Assistant Medical Research Professor of Pharmacology and Assistant Medical Research Professor in the Department of Anesthesiology*, 5215 Russell Road
- <sup>190</sup>Shubert, Richard (1975), Ph.D. (Washington), *Assistant Professor of Electrical Engineering*, 2401 West Club Boulevard
- <sup>191</sup>Sibley, Mulford Q. (1977), Ph.D. (Minnesota), *Visiting Professor of Political Science*, 1706 Shawnee Street
- <sup>192</sup>Sidbury, James B., Jr. (1961), M.D. (Columbia), *Professor of Pediatrics*, 4044 Nottaway Road
- Siddiqi, Mohammed Mozzaum (1977), Ph.D. (California at Berkeley), *Assistant Professor of Hindi-Urdu*, 2607 University Drive
- Siedow, James N. (1976), Ph.D. (Indiana), *Assistant Professor of Botany*, 3916 Inwood Drive
- Siegel, Lewis (1968), Ph.D. (Johns Hopkins), *Associate Professor of Biochemistry*, 1907 Fountain Ridge Road, Chapel Hill, N.C.
- Siegler, Ilene C. (1974), Ph.D. (Syracuse), *Assistant Professor of Medical Psychology in the Department of Psychiatry*, Route 2, Box 125, Hiway Drive, Chapel Hill, N.C.
- Sieker, Herbert O. (1955), M.D. (Washington Univ.), *Professor of Medicine*, 3949 Plymouth Road
- Silberman, Harold R. (1962), M.D. (Washington Univ.), *Professor of Medicine*, 2718 Princeton Drive
- Silver, George Addison, III (1946), M.D. (Duke), *Associate Professor of Psychiatry*, 3910 Dover Road
- <sup>193</sup>Silverstein, Burton V. (1977), M.D. (Pennsylvania), *Associate in the Department of Medicine*, 504 Sharon Road, Chapel Hill, N.C.
- Simon, Sidney A. (1974), Ph.D. (Northwestern), *Assistant Professor of Physiology and Assistant Medical Research Professor of Anesthesiology*, 1609 Hollywood Street

<sup>190</sup>Through 8-31-78.

<sup>191</sup>Through 4-30-78.

<sup>192</sup>Leave of absence 9-1-75 through 8-31-79.

<sup>193</sup>Through 6-30-78.



- Simons, Elwyn LaVerne (1977), Ph.D. (Princeton), D.Phil. (Oxford), *Professor of Anthropology and Professor of Anatomy*, 4506 Malvern Road
- <sup>194</sup>Simpson, Ida Harper (1959), Ph.D. (North Carolina at Chapel Hill), *Associate Professor of Sociology*, 604 Brookview Road, Chapel Hill, N.C.
- Sinha, Radharaman Prasad (1978), Ph.D. (Manchester), *Visiting Professor of Economics*, Apartment K, 2015 Yearby Street
- <sup>195</sup>Skinner, George William (1978), Ph.D. (Cornell), *Visiting Professor of Anthropology*, Apartment T, Building 25, 311 South LaSalle Street
- Skinner, Leroy C. (1959), M.A. (Maryland), *Associate Professor of Physical Education*, 416 Argonne Drive
- Slotkin, Theodore A. (1971), Ph.D. (Rochester), *Associate Professor of Pharmacology*, 604 Duluth Street
- Smith, Carl J. (1978), B.S. (Ithaca College), *Clinical Associate in the Department of Physical Therapy*, 2405 Englewood Avenue
- Smith, Carol Ann (1974), Ph.D. (Stanford), *Associate Professor of Anthropology*, 2902 Gretmar Drive
- Smith, Constance (1973), M.Nurs. (Washington), *Assistant Professor of Nursing*, Apartment E-16, 1829 Front Street
- Smith, David Alexander (1962), Ph.D. (Yale), *Associate Professor of Mathematics*, 1408 Shepherd Street
- <sup>196</sup>Smith, David C. (1977), M.S. (Michigan), *Temporary Assistant Professor of Zoology*, 1011½ Monmouth Avenue
- Smith, Donald S., II (1961), M.H.A. (Minnesota), *Assistant Professor of Health Administration*, 4167 Deepwood Circle
- Smith, Dwight Moody, Jr. (1965), Ph.D. (Yale), *Professor of New Testament Interpretation in the Divinity School*, 2728 Spencer Street
- Smith, Grover C. (1952), Ph.D. (Columbia), *Professor of English*, 215 West Woodridge Drive
- Smith, Harmon L., Jr. (1959), Ph.D. (Duke), *Professor of Moral Theology in the Divinity School and Professor of Community and Family Medicine*, 3510 Randolph Road
- <sup>197</sup>Smith, James Benjamin, Jr. (1969), M.M. (Union Theological Seminary), *Lecturer in Music*, 2500 Glendale Avenue
- Smith, Joel (1958), Ph.D. (Northwestern), *Professor of Sociology*, 4 Stoneridge Circle
- Smith, Leroy Pascal (1967), M.S. (Massachusetts Inst. of Tech.), *Assistant Professor of Mathematics*, 3505 Rugby Road
- Smith, Peter (1959), Ph.D. (Cambridge), *Professor of Chemistry*, 2711 Circle Drive
- Smith, R. Kent, Jr. (1975), Ph.D. (Maryland), *Assistant Professor and Research Associate in Physics*, 2019 Wilson Street
- <sup>198</sup>Smith, Ralph E. (1970), Ph.D. (Colorado), *Associate Professor of Microbiology and Immunology*, 4146 Deepwood Circle
- Smith, Thomas Allan (1970), M.D. (Vanderbilt), *Associate in Psychiatry*, 25 Glendale Road, Asheville, N.C.
- Smith, William M. (1977), Ph.D. (Duke), *Assistant Medical Research Professor of Medicine*, 1435 North Greensboro Street, Carrboro, N.C.
- Smith, Wirt W. (1957), M.D. (Texas), *Associate Professor of Experimental Surgery*, 3301 Surrey Road
- <sup>199</sup>Smolen, Robert C. (1977), Ph.D. (Indiana), *Associate in Medical Psychology in the Department of Psychiatry and Associate in the Department of Pediatrics*, 2002 Dartmouth Drive
- <sup>200</sup>Smullin, Frank Mayer (1972), M.F.A. (Queens College), *Instructor in Art*, 918 Green Street
- Snow, Thomas Russell (1976), Ph.D. (Duke), *Assistant Medical Research Professor of Physiology and Assistant Medical Research Professor of Medicine*, 1019 West Markham Avenue
- Snyderman, Ralph (1971), M.D. (State Univ. of New York, Downstate Med. Ctr.), *Professor of Medicine and Associate Professor of Immunology*, 2600 Princeton Avenue
- Solovieff, Gregory V. (1976), M.D. (Duke), *Associate in Community and Family Medicine*, Apartment 61-A, 2920 Chapel Hill Road
- <sup>201</sup>Somjen, George G. (1963), M.D. (Amsterdam), *Professor of Physiology*, 6509 Hunter's Lane
- Sommer, Joachim R. (1957), M.D. (Munich), *Professor of Pathology*, 2724 Sevier Street
- Soroush, Ali (1975), M.D. (Isfahan, Iran), *Assistant Professor of Medicine*, 3714 Eton Road
- <sup>202</sup>Soules, Michael R. (1976), M.D. (California at Los Angeles), *Assistant Professor of Obstetrics and Gynecology*, 918 West Markham Avenue
- Spach, Madison Stockton (1958), M.D. (Duke), *James B. Duke Professor of Pediatrics and Professor of Physiology*, 2632 McDowell Road
- Spangler, Dorothy (1954), M.A. (North Carolina at Chapel Hill), *Associate Professor of Physical Education*, Apartment M, 2729 Brown Avenue

<sup>194</sup>Sabbatical leave, fall 1978-79.

<sup>195</sup>Through 6-30-78.

<sup>196</sup>Through 5-31-78.

<sup>197</sup>Sabbatical leave, fall 1978-79.

<sup>198</sup>Sabbatical leave 7-1-78 through 6-30-79.

<sup>199</sup>Through 4-8-78.

<sup>200</sup>Sabbatical leave, spring 1978-79.

<sup>201</sup>Sabbatical leave for the period 1-25-78 through 7-25-78.

<sup>202</sup>Through 6-30-78.

- Sparks, Bertel M. (1966), S.J.D. (Michigan), *Professor of Law*, 1707 Woodburn Road
- <sup>203</sup>Spencer, Curtis E. (1975), M.S. (North Carolina A&T), *Visiting Assistant Professor of Aerospace Studies*, 3702 Suffolk Street
- Spencer, John R. (1978), Ph.D. (Yale), *Professor of Art*, 1320 North Gregson Street
- Spencer, Kathryn G. (1977), M.P.H. (North Carolina at Chapel Hill), *Clinical Instructor in Nursing*, 103 Fallen Log Road, Chapel Hill, N.C.
- Spock, Alexander (1962), M.D. (Maryland), *Professor of Pediatrics*, 515 Duluth Street
- Spragens, Thomas A., Jr. (1968), Ph.D. (Duke), *Associate Professor of Political Science*, 227 Forestwood Drive
- St. Antoine, Theodore J. (1978), J.D. (Michigan), *Visiting Professor of Law*, 320 Woodhaven, Chapel Hill, N.C.
- Stack, Carol B. (1975), Ph.D. (Illinois), *Associate Professor of Policy Sciences and Adjunct Associate Professor of Anthropology*, Route 1, Box 201-H
- <sup>204</sup>Stackelberg, Olaf Patrick (1963), Ph.D. (Minnesota), *Associate Professor of Mathematics*, 2101 West Club Boulevard
- Staddon, John (1967), Ph.D. (Harvard), *Professor of Psychology*, 2719 McDowell Road
- <sup>205</sup>Stafford, Nancy H. (1973), B.S. (Indiana), *Associate in Physical Therapy*, 6807 Windover Road
- Stairs, Gerald Ray (1978), Ph.D. (Yale), *Professor of Forestry and Environmental Studies*, Apartment 20-A, 311 South LaSalle Street
- Stambaugh, William J. (1961), Ph.D. (Yale), *Professor of Forest Pathology*, 3211 Sherbon Drive
- Stanley, Dennis Keith, Jr. (1961), Ph.D. (Johns Hopkins), *Associate Professor of Classical Studies*, Box 6905 College Station
- Starmer, Charles Franklin, Jr. (1966), Ph.D. (North Carolina at Chapel Hill), *Professor of Computer Science and Associate Professor of Experimental Medicine*, Route 7, Gray Bluff Trail, Chapel Hill, N.C.
- Stars, W. K. (1966), M.A. (North Carolina at Chapel Hill), *Associate Professor of Art*, 1916 Glendale Avenue
- <sup>206</sup>Stead, Eugene Anson, Jr. (1947), M.D. (Emory), *Florence McAlister Professor of Medicine*, Route 1, Box 135, Clarksville, Va.
- Stead, Nancy W. (1975), M.D. (Duke), *Associate in the Department of Medicine*, 3926 Linden Terrace
- Stead, William Wallace (1977), M.D. (Duke), *Associate in the Department of Medicine*, 637 Morreene Road
- Steege, Deborah A. (1977), Ph.D. (Stanford), *Assistant Professor of Biochemistry*, 3203 Cromwell Road
- Steege, John Francis (1977), M.D. (Yale), *Assistant Professor of Obstetrics and Gynecology*, 3203 Cromwell Road
- Steinbock, Elizabeth K. (1977), Ph.D. (Oregon), *Assistant Professor of Medical Psychology in the Department of Psychiatry*, 2719 Heather Glen Road
- Steinmetz, David C. (1971), Th.D. (Harvard), *Professor of Church History and Doctrine in the Divinity School*, 2517 Wrightwood Avenue
- <sup>207</sup>Stewart, Philip Robert (1972), Ph.D. (Yale), *Associate Professor of Romance Languages*, 522 Wofford Road
- Stickel, Delford L. (1962), M.D. (Duke), *Professor of Surgery*, 3108 Devon Road
- <sup>208</sup>Stolz, Otto George (1972), J.D. (Virginia), *Professor of Law*, Route 1, Box 249, St Mary's Road, Hillsborough, N.C.
- <sup>209</sup>Stone, Alan A. (1975), Ph.D. (Washington), *Assistant Professor of History*, 2106 Strebor Road
- Stone, Donald E. (1963), Ph.D. (California at Berkeley), *Professor of Botany*, 2706 Spencer Street
- <sup>210</sup>Stone, Kenneth R. (1976), Ph.D. (Colorado), *Assistant Medical Research Professor of Urology in the Department of Surgery*, 936 Clarion Drive
- <sup>211</sup>Stone, Virginia (1966), Ph.D. (North Carolina at Chapel Hill), *Professor of Nursing*, 1829 Front Street
- Stopford, Woodhall (1973), M.D. (Harvard), *Assistant Clinical Professor of Community and Family Medicine*, Route 1, Box 288, Hillsborough, N.C.
- Storey, Kenneth B. (1974), Ph.D. (British Columbia), *Assistant Professor of Zoology*, Apartment 21-J, 311 South LaSalle Street
- Strain, Boyd R. (1969), Ph.D. (California at Los Angeles), *Professor of Botany*, 2610 Oberlin Drive
- Strandberg, Victor H. (1966), Ph.D. (Brown), *Associate Professor of English*, 2709 Augusta Drive
- Strauss, Harold Carl (1972), M.D. (McGill), *Associate Professor of Medicine and Assistant Professor of Pharmacology*, 2921 Buckingham Road
- Strayhorn, Joseph Mallory, Jr. (1977), M.D. (Northwestern), *Assistant Professor of Psychiatry*, Apartment 7-K, 1505 Duke University Road

<sup>203</sup>Through 8-20-78.

<sup>204</sup>Through 8-31-78.

<sup>205</sup>Through 6-30-78.

<sup>206</sup>Retired 8-31-78.

<sup>207</sup>Sabbatical leave 1978-79.

<sup>208</sup>Leave of absence 1-1-78 through 6-30-79.

<sup>209</sup>Through 8-31-78.

<sup>210</sup>Through 5-31-78.

<sup>211</sup>Retired 8-31-78.

- Streeter, Arthur H. (1978), M.H.A. (Duke), *Associate in the Department of Community and Family Medicine*, 1114 Burch Avenue
- Strickler, Timothy Lee (1973), Ph.D. (Chicago), *Assistant Professor of Anatomy*, 2911 Sparger Road
- Strobel, Howard Austin (1948), Ph.D. (Brown), *Professor of Chemistry*, 1119 Woodburn Road
- Strong, Susan (1978), M.S. (Ohio State), *Assistant Professor of Nursing*, 813 Long Leaf Drive, Chapel Hill, N.C.
- Sturner, Raymond A. (1975), M.D. (Georgetown), *Assistant Professor of Pediatrics*, 2478 Foxwood Drive, Chapel Hill, N.C.
- Sullivan, Daniel Carl (1978), M.D. (Vermont), *Assistant Professor of Radiology*, 94 Cedar Hills Circle, Chapel Hill, N.C.
- Sullivan, James Bolling, III (1970), Ph.D. (Texas), *Associate Professor of Biochemistry*, 200 Craven Street, Beaufort, N.C.
- Sullivan, John L. (1973), M.D. (Johns Hopkins), *Associate Professor of Psychiatry*, 902 Burning Tree Drive, Chapel Hill, N.C.
- Sullivan, Robert J., Jr. (1974), M.D. (Cornell), *Assistant Professor of Community and Family Medicine and Assistant Professor of Medicine*, 306 Highview Drive, Chapel Hill, N.C.
- Sunderland, Elizabeth Read (1932-42; 1943), Ph.D. (Radcliffe), *Professor of Art*, 6416 College Station
- Surwit, Earl Allan (1977), M.D. (Georgetown), *Assistant Professor of Obstetrics and Gynecology*, 504 Colony Woods Drive, Chapel Hill, N.C.
- Surwit, Richard Samuel (1978), Ph.D. (McGill), *Associate Professor of Medical Psychology in the Department of Psychiatry and Lecturer in Psychology*, Apartment 18-F, 2836 Chapel Hill Road
- Sutherland, John P. (1969), Ph.D. (California at Berkeley), *Associate Professor of Zoology*, 412 Ann Street, Beaufort, N.C.
- <sup>212</sup>Swaim, Lindian Joseph, Jr. (1977), M.D. (North Carolina at Chapel Hill), *Assistant Professor of Obstetrics and Gynecology*, 412 Thornwood Drive, Chapel Hill, N.C.
- Swanson, Louis Earl (1949), A.B. (Hamline), *Associate Professor of Health Administration*, 2418 Wrightwood Avenue
- Swift, Michael Crane (1977), Ph.D. (British Columbia), *Temporary Instructor in Zoology*, 912 Anderson Street
- Sydnor, Charles Ford (1972), M.D. (Virginia), *Assistant Clinical Professor of Ophthalmology*, Route 2, Box 251-A, Snow Camp, N.C.
- Sylvia, Avis Latham (1977), Ph.D. (North Carolina at Chapel Hill), *Assistant Medical Research Professor of Physiology*, 324 West University Drive, Chapel Hill, N.C.
- Tallos, Peter (1978), M.B. (Sydney), *Assistant Professor of Medicine*, Apartment 208, 3545 Mayfair Street
- Talton, Ingeborg Hildebrand (1968), Ph.D. (Geissen), M.D. (Frankfurt/Main, Germany), *Associate Professor of Anesthesiology*, 2725 Montgomery Street
- Tanford, Charles (1960), Ph.D. (Princeton), *James B. Duke Professor of Physical Biochemistry*, 1430 North Mangum Street
- Taska, Ronald J. (1978), M.D. (Baylor), *Assistant Professor of Psychiatry*, 3122 Alabama Avenue
- Tauchen, George Eugene (1977), Ph.D. (Minnesota), *Assistant Professor of Economics*, 524 Hooper Lane, Chapel Hill, N.C.
- Taylor, Deanne Osborn (1977), M.S.N. (Pittsburgh), *Instructor in Nursing*, 503 Marshall Way
- Taylor, Robert Earl (1974), Ph.D. (North Carolina at Chapel Hill), *Assistant Professor of Business Administration*, 1727 Allard Road, Chapel Hill, N.C.
- Taylor, William J., Jr. (1978), Ph.D. (Tennessee), *Assistant Clinical Professor of Community and Family Medicine*, Apartment 05, 2726 Croasdaile Drive
- TePaske, John (1967), Ph.D. (Duke), *Professor of History*, 15 Heath Place
- Tetel, Marcel (1960), Ph.D. (Wisconsin), *Professor of Romance Languages*, 1804 Woodburn Road
- Thompson, Ervin M. (1977), M.D. (Vanderbilt), *Assistant Professor of Psychiatry*, 1702 Sprunt Avenue
- Thompson, Robert J., Jr. (1975), Ph.D. (North Dakota), *Associate Professor of Medical Psychology in the Department of Psychiatry, Assistant Professor of Medical Psychology in the Department of Pediatrics, and Lecturer in Psychology*, 2516 Alpine Road
- Thompson, Thomas T. (1970), M.D. (Med. Coll. of Virginia), *Associate Professor of Radiology and Associate Professor of Community and Family Medicine*, 3303 Stoneybrook Drive
- Thompson, William A. (1977), Ph.D. (British Columbia), *Assistant Professor of Resource Ecology in the School of Forestry and Environmental Studies*, 28 Lebanon Circle
- Thompson, William Moreau (1974), M.D. (Pennsylvania), *Associate Professor of Radiology*, 1502 Michaux Road, Chapel Hill, N.C.
- Thurstone, Frederick L. (1967), Ph.D. (North Carolina State), *Professor of Biomedical Engineering and Professor of Radiology*, 2532 Sevier Street
- Tirro, Frank (1973), Ph.D. (Chicago), *Associate Professor of Music*, 3816 Pickett Road
- <sup>213</sup>Tiryakian, Edward A. (1965), Ph.D. (Harvard), *Professor of Sociology*, 1523 Hermitage Court

<sup>212</sup>Through 9-30-78.

<sup>213</sup>Sabbatical leave 1978-79.



- Tisher, C. Craig (1969), M.D. (Washington Univ.), *Professor of Medicine and Associate Professor of Pathology*, 3825 Nottaway Road
- <sup>213a</sup>Titus, Bert R. (1961), C.P.O., *Associate Professor of Orthotics and Prosthetics*, 225 West Woodridge Drive
- Todd, Ralph Larry (1978), M.Ph. (Yale), *Instructor in Music*, Apartment 62-B, 2920 Chapel Hill Road
- Tomlinson, Russell F. (1962), Ph.D. (Florida), *Assistant Professor of Medical Psychology in the Department of Psychiatry*, 401 Holly Lane, Chapel Hill, N.C.
- Torre-Bueno, Jose Rollin (1978), Ph.D. (Rockefeller Univ.), *Assistant Medical Research Professor of Physiology*, 1009 Urban Avenue
- Toth, Paul S. (1975), B.A. (Kent State Univ.), *Associate in Community and Family Medicine*, 3607 Mossdale Avenue
- Touchstone, William A. (1976), M.A. (Iowa), *Associate in Activities Therapy in the Department of Psychiatry*, 11 Waverly Road, Asheville, N.C.
- Tourian, Ara Y. (1969), M.D. (State Univ. of Iowa), *Associate Professor of Medicine*, 1018 Demerius Street
- Tower, Edward (1974), Ph.D. (Harvard), *Professor of Economics*, Box 262, Route 7, Parker Road, Chapel Hill, N.C.
- Treml, Vladimir G. (1967), Ph.D. (North Carolina at Chapel Hill), *Professor of Economics*, 603 Long Leaf Drive, Chapel Hill, N.C.
- Trivedi, Kishor S. (1975), Ph.D. (Illinois), *Assistant Professor of Computer Science*, 19 Dubarry Court
- Trought, William S. (1975), M.D. (Tufts), *Assistant Professor of Radiology*, 4021 Bristol Road
- Tsui, Yuet (1972), Ph.D. (Duke), *Assistant Professor of Civil Engineering*, 3815 Tremont Drive
- Tucker, Vance A. (1964), Ph.D. (California at Los Angeles), *Professor of Zoology*, 0040 Biological Sciences Bldg.
- Turner, Arlin (1953), Ph.D. (Texas), *James B. Duke Professor of English*, 1115 Woodburn Road
- Turner, Stephen Roy (1976), Ph.D. (Duke), *Assistant Medical Research Professor of Microbiology and Immunology and Assistant Medical Research Professor of Pediatrics*, 920 Burch Avenue
- Tuthill, Richard Lovejoy (1953), Ed.D. (Columbia), *Professor of Economic Geography*, 2709 Dogwood Road
- Tyor, Malcolm P. (1955), M.D. (Duke), *Professor of Medicine*, 810 East Forest Hills Boulevard
- Tyrey, E. Lee (1970), Ph.D. (Illinois), *Associate Professor of Obstetrics and Gynecology and Assistant Professor of Anatomy*, 3306 Rolling Hill Road
- U, Raymond (1967), Ph.D. (Kyoto Univ.) *Assistant Professor of Radiology*, 3916 Linden Terrace
- Urban, Bruno Josef (1972), M.D. (Univ. of Cologne, Germany), *Professor of Anesthesiology and Assistant Professor of Neurosurgery in the Department of Surgery*, 5414 Beaumont Drive
- Urbaniak, James R. (1969), M.D. (Duke), *Professor of Orthopaedics in the Department of Surgery*, 3918 Dover Road
- Utku, Senol (1970), Sc.D. (Massachusetts Inst. of Tech.), *Professor of Civil Engineering*, Apartment 16-E, 3301 Shannon Road
- Valenzuela, Arturo A. (1970), Ph.D. (Columbia), *Associate Professor of Political Science*, 1706 Shawnee Street
- Van Alstyne, William W. (1964), J.D. (Stanford), *William R. and Thomas L. Perkins Professor in Law*, 1702 Woodburn Road
- Vanaman, Thomas C. (1970), Ph.D. (Duke), *Associate Professor of Microbiology and Immunology*, 1007 Minerva Avenue
- <sup>214</sup>Vander Weide, James H. (1972), Ph.D. (Northwestern), *Associate Professor of Business Administration*, 12 Forest Ridge Place
- <sup>215</sup>van Hemmen, Jan Leonard (1977), Ph.D. (Groningen, The Netherlands), *Visiting Assistant Professor of Mathematics*, Apartment 204, 312 Buchanan Boulevard
- Vann, Richard D. (1976), Ph.D. (Duke), *Assistant Medical Research Professor of Anesthesiology*, 1116 Wells Street
- Vartanian, Vartan (1961), M.D. (Cluj Univ., Rumania), *Professor of Anesthesiology*, 1533 Hermitage Court
- Vaughn, Thomas Claude (1978), M.D. (Texas), *Associate in the Department of Obstetrics and Gynecology*, 5122 Pine Trail Drive
- <sup>216</sup>Vaught, Constance Elizabeth (1977), M.A. (Columbia), *Instructor in Nursing*, Apartment J-1, 2106 Front Street
- Vaupel, James W. (1972), Ph.D. (Harvard), *Assistant Professor of Policy Sciences and Assistant Professor of Business Administration*, 2215 West Club Boulevard
- Velez, Ramon (1976), M.D. (New York University), *Assistant Professor of Medicine and Assistant Professor of Community and Family Medicine*, 2815 Welcome Drive
- Vernon, John M. (1966), Ph.D. (Massachusetts Inst. of Tech.), *Professor of Economics*, 1001 Gloria Avenue

<sup>213a</sup>Deceased 12-17-78.

<sup>214</sup>Sabbatical leave, fall 1978-79.

<sup>215</sup>Through 8-31-78.

<sup>216</sup>Through 8-31-78.



- Verwoerd, Adriaan (1962), M.D. (Amsterdam), *Professor of Psychiatry and Assistant Professor of Nursing*, 2747 Sevier Street
- <sup>217</sup>Vesel, Fred H. (1975), M.S. (Purdue), *Visiting Assistant Professor of Aerospace Studies*, 404 Melanie Court, Chapel Hill, N.C.
- Vesić, Aleksandar Sedmak (1964), D.Sc. (Belgrade), *J. A. Jones Professor of Civil Engineering*, 1722 Duke University Road
- Vesilind, P. Aarne (1970), Ph.D. (North Carolina at Chapel Hill), *Associate Professor of Civil Engineering and Associate Professor of Environmental Studies in the School of Forestry and Environmental Studies*, 513 Lakeshore Lane, Chapel Hill, N.C.
- Villaneuva, Elia E. (1969), M.A. (Duke), *Associate Professor of Physical Therapy*, Route 7, Huse Street
- Vincent, Patrick R. (1954), Ph.D. (Johns Hopkins), *Associate Professor of Romance Languages*, 1635 Marion Avenue
- Vogel, F. Stephen (1961), M.D. (Western Reserve), *Professor of Pathology*, Route 1, Box 203
- Vogel, Steven (1966), Ph.D. (Harvard), *Associate Professor of Zoology*, 1212 Woodburn Road
- Vollmer, Robin T. (1975), M.D. (Duke), *Assistant Professor of Pathology*, 4315 Sunny Court
- Volvw, Michael Robert (1972), M.D. (Seton Hall Coll. of Med.), *Associate in Psychiatry*, Apartment 3-B, 200 Seven Oaks Road
- von Ramm, Olaf T. (1974), Ph.D. (Duke), *Assistant Professor of Biomedical Engineering and Assistant Professor of Medicine*, 120 West Seeman Street
- Wachtel, Howard (1968), Ph.D. (New York University), *Associate Professor of Biomedical Engineering and Associate Professor of Physiology*, 3212 Sherbon Drive
- Waddell, Mary Gwendolyn H. (1977), M.S.N. (North Carolina at Chapel Hill), *Instructor in Nursing*, 249 Seminole Court, Chapel Hill, N.C.
- Wadsworth, Joseph A. C. (1965), M.D. (Duke), D.Sc., *Professor of Ophthalmology*, 1532 Pinecrest Road
- <sup>218</sup>Waggoner, John P., Jr. (1957), B.D. (Duke), B.S. in L.S. (North Carolina at Chapel Hill), *Associate Professor in the Faculty of Arts and Sciences and Associate Librarian*, 2812 Devon Road
- Wagner, Galen Strohm (1970), M.D. (Duke), *Associate Professor of Medicine*, 3415 Cromwell Road
- Wagner, Joseph Lawrence (1972), D.V.M. (Ohio State), *Assistant Professor of Microbiology and Immunology*, Route 7, Box 61
- Wagner, Robert Alan (1978), Ph.D. (Carnegie-Mellon), *Associate Professor of Computer Science*, Apartment I-11, 4216 Garrett Road
- Wainwright, Stephen Andrew (1964), Ph.D. (California at Berkeley), *Professor of Zoology*, 3812 Dover Road
- Waite, Robert Sears (1978), Ph.D., M.D. (Duke), *Assistant Professor of Pathology*, 2106 Englewood Avenue
- <sup>219</sup>Wakakuri, Hiromi (1977), M.D. (Yokohama City Univ., Japan), *Visiting Associate in the Department of Anesthesiology*, 1026 West Trinity Avenue
- Walker, John Ingram (1978), M.D. (Texas), *Associate in the Department of Psychiatry*, 2300 Hilton Avenue
- Walker, William D. (1971), Ph.D. (Cornell), *Professor of Physics*, 907 Green Street
- Wallace, Andrew Grover (1964), M.D. (Duke), *Walter Kempner Professor of Medicine and Assistant Professor of Physiology*, 3413 Rugby Road
- Wallace, Thomas Dudley (1974), Ph.D. (Chicago), *Professor of Economics*, 2425 Wrightwood Avenue
- Wallach, Michael A. (1962-72; 1973), Ph.D. (Harvard), *Professor of Psychology*, 14 Heath Place
- Walter, Richard L. (1962), Ph.D. (Notre Dame), *Professor of Physics*, 2818 McDowell Road
- Wang, Helen Hai-ling (1978), M.B. (National Taiwan University), *Assistant Professor of Community and Family Medicine (Epidemiology)*, 102 Creekside Lane, Chapel Hill, N.C.
- Wang, Hsioh Shan (1965), M.B. (National Taiwan Univ. Med. Coll.), *Professor of Psychiatry*, 2832 McDowell Road
- Wang, Lily Pan (1970), M.S.W. (North Carolina at Chapel Hill), *Associate in Psychiatric Social Work in the Department of Psychiatry*, 2832 McDowell Road
- Wang, Paul P. (1968), Ph.D. (Ohio State), *Professor of Electrical Engineering*, 2709 Montgomery Street
- Ward, Calvin Lucian (1952), Ph.D. (Texas), *Professor of Zoology*, 1015 West Markham Avenue
- Ward, E. Frances (1969), Ph.D. (Brown), *Associate Professor of Microbiology and Immunology and Assistant Professor of Experimental Surgery*, 424 Carolina Circle
- Wardropper, Bruce W. (1962), Ph.D. (Pennsylvania), *William H. Wannamaker Professor of Romance Languages*, 3443 Rugby Road
- Warner, David Michael (1976), Ph.D. (Tulane), *Assistant Professor of Health Administration*, 413 Ridgcrest Drive, Chapel Hill, N.C.
- Warner, Seth L. (1955), Ph.D. (Harvard), *Professor of Mathematics*, 2433 Wrightwood Avenue
- Warren David G. (1975), J.D. (Duke), *Professor of Health Administration*, 408 Lyons Road, Chapel Hill, N.C.

<sup>217</sup>Through 9-1-78.

<sup>218</sup>Leave of absence, spring 1977-78. Retired 8-31-78.

<sup>219</sup>Through 6-30-78.

- Wartenberg, Thomas E. (1977), Ph.D. (Pittsburgh), *Assistant Professor of Philosophy*, 2409 West Club Boulevard
- <sup>220</sup>Waters, Raymond S., Jr. (1976), B.S.E.E. (U.S. Naval Academy), *Visiting Assistant Professor of Naval Science*, 4605 Berini Drive
- Watson, Richard Lyness, Jr. (1939), Ph.D. (Yale), *Professor of History*, 109 Pinecrest Road
- Waugh, Robert Andrew (1972-76; 1977), M.D. (Pennsylvania), *Assistant Professor of Medicine*, 3113 Camelot Court
- Weber, Bruce A. (1978), Ph.D. (Illinois), *Associate Professor of Audiology in the Department of Surgery*, 3224 Pinafore Drive
- Webster, Robert E. (1970), Ph.D. (Duke), *Professor of Biochemistry*, 3720 Saint Marks Road
- Wechsler, Andrew S. (1974), M.D. (State Univ. of New York, Downstate Med. Ctr.), *Associate Professor of Surgery and Assistant Professor of Physiology*, 1110 Sandlewood Drive
- Weed, John Conant, Jr. (1973-75; 1978), M.D. (Tulane), *Associate Professor of Obstetrics and Gynecology*, 723 Anderson Street
- <sup>221</sup>Weiler, Stephen James (1977), M.D. (Ohio State), *Associate in the Department of Psychiatry*, Route 7, Box 195
- Weinberg, Joe Brice (1978), M.D. (Arkansas), *Assistant Professor of Medicine*, 4118 Cobblestone Place
- Weiner, Richard D. (1977), M.D., Ph.D. (Duke), *Medical Research Associate in the Department of Psychiatry*, 3526 Hamstead Court
- Weinerth, John L. (1974), M.D. (Harvard), *Associate Professor of Urology and Associate Professor of Surgery*, 3102 Doubleday Place
- <sup>222</sup>Weintraub, E. Roy (1970), Ph.D. (Pennsylvania), *Professor of Economics*, 1601 Hermitage Court
- <sup>223</sup>Weisfeld, Morris (1967), Ph.D. (Yale), *Professor of Mathematics*, 419 Country Lane Drive
- Weiss, James R. (1977), M.D. (Louisiana State), *Associate in the Department of Psychiatry and Associate in the Department of Medicine*, 616 Rock Creek Road, Chapel Hill, N.C.
- <sup>223a</sup>Weistart, John C. (1969), J.D. (Duke), *Professor of Law*, 1005 Minerva Avenue
- <sup>224</sup>Weitz, Henry (1950), Ed.D. (Rutgers), *Professor of Education*, 2716 Circle Drive
- Weitzner, Stanley Wallace (1977), M.D. (New York University), *Professor of Anesthesiology*, 417 Lyons Road, Chapel Hill, N.C.
- Weller, Henry Richard (1978), Ph.D. (Duke), *Visiting Associate Professor of Physics*, 5619 Falkirk Drive
- Wells, Richard L. (1962), Ph.D. (Indiana), *Professor of Chemistry*, 3421 Cromwell Road
- Wells, Samuel A., Jr. (1970), M.D. (Emory), *Professor of Surgery and Assistant Professor of Immunology*, 2501 Wrightwood Avenue
- Welsh, Paul (1948), Ph.D. (Cornell), *Professor of Philosophy*, 2749 Dogwood Road
- Welt, Selman I. (1975), M.D. (North Carolina at Chapel Hill), *Assistant Professor of Obstetrics and Gynecology*, 3817 Hillgrand Drive
- Wender, Stephen A. (1977), Ph.D. (Iowa), *Assistant Professor and Research Associate in Physics*, Sparrow Trail, Chapel Hill, N.C.
- Werman, David S. (1976), M.D. (Lausanne, Switzerland), *Professor of Psychiatry*, Bartram Drive, Chapel Hill, N.C.
- Wertz, Martha L. (1960), M.S.W. (Tulane), *Assistant Professor of Psychiatric Social Work*, 4101 New Bern Place
- <sup>225</sup>Westbrook, Robert A. (1975), Ph.D. (Michigan), *Assistant Professor of Business Administration*, 2451 Honeysuckle Road, Chapel Hill, N.C.
- Westerhoff, John H., III (1974), Ed.D. (Columbia), *Professor of Religion and Education in the Divinity School*, 3510 Racine Street
- <sup>226</sup>Wetzel, Christopher Gaylord (1977), Ph.D. (North Carolina at Chapel Hill), *Assistant Professor of Psychology*, 112 Saint Paul Street
- <sup>227</sup>Weymark, John A. (1976), Ph.D. (Pennsylvania), *Assistant Professor of Economics*, Apartment 4-J, 311 South LaSalle Street
- Whalen, Robert E. (1961), M.D. (Cornell), *Professor of Medicine*, 3509 Westover Road
- Whanger, Alan D. (1970), M.D. (Duke), *Associate Professor of Psychiatry*, 1712 Woodburn Road
- Wheat, Robert W. (1958), Ph.D. (Washington Univ.), *Professor of Microbiology and Assistant Professor of Biochemistry*, 2720 Montgomery Street
- White, Eleanor M., (1975), M.S. (California at San Francisco), *Assistant Professor of Nursing and Assistant Professor of Psychiatric Nursing in the Department of Psychiatry*, 107 Mosswood Court, Chapel Hill, N.C.
- White, Fred M., III (1959), M.F. (Duke), *Assistant Professor of Silviculture in the School of Forestry and Environmental Studies*, 3323 Rolling Hill Road

<sup>220</sup>Through 9-14-78.

<sup>221</sup>Through 10-30-78.

<sup>222</sup>Sabbatical leave, fall 1978-79.

<sup>223</sup>Sabbatical leave, fall 1978-79.

<sup>223a</sup>Leave of absence 1978-79.

<sup>224</sup>Retired 2-28-78.

<sup>225</sup>Through 8-31-78.

<sup>226</sup>Through 8-31-78.

<sup>227</sup>Leave of absence 1978-79.

- White, Richard Alan (1963), Ph.D. (Michigan), *Professor of Botany*, 309-A, Route 1, Hillsborough, N.C.
- Widmann, Frances K. (1971), M.D. (Western Reserve), *Associate Professor of Pathology*, 1504 Cumberland Road, Chapel Hill, N.C.
- Wiebe, Richard Herbert (1972), M.D. (Saskatchewan), *Associate Professor of Obstetrics and Gynecology*, 1015 Minerva Avenue
- Wilbur, Henry M. (1973), Ph.D. (Michigan), *Associate Professor of Zoology*, Route 1, Box 308-D, Hillsborough, N.C.
- Wilbur, Karl Milton (1946), Ph.D. (Pennsylvania), *James B. Duke Professor of Zoology*, 2408 McGhee Street
- Wilbur, Robert L. (1957), Ph.D. (Michigan), *Professor of Botany*, 2613 Stuart Drive
- Wilder, Pelham, Jr. (1949), Ph.D. (Harvard), *Professor of Chemistry and Professor of Pharmacology*, 2514 Wrightwood Avenue
- Wilfert, Catherine M. (1969), M.D. (Harvard), *Associate Professor of Pediatrics and Associate Professor of Clinical Virology in the Department of Microbiology and Immunology*, Route 2, Piney Mountain Road, Chapel Hill, N.C.
- Wilkins, Robert Henry (1968-72; 1976), M.D. (Pittsburgh), *Professor of Neurosurgery in the Department of Surgery*, 2822 Chelsea Circle
- Wilkinson, Robert H., Jr. (1967), M.D. (Washington Univ.), *Associate Professor of Radiology*, 3519 Courtland Drive
- Wilkinson, William E. (1975), Ph.D. (North Carolina at Chapel Hill), *Assistant Professor of Community and Family Medicine*, 2013 North Lakeshore Drive, Chapel Hill, N.C.
- Willett, Hilda Pope (1948), Ph.D. (Duke), *Professor of Bacteriology*, 901 Wakestone Circle, Raleigh, N.C.
- Williams, Claven (1978), B.A. (Albany State Coll.), *Visiting Assistant Professor of Naval Science*, 5 Druid Place
- <sup>228</sup>Williams, Dorothy (1971), B.S. (Richmond), *Instructor in Mathematics*, 2622 Lombard Avenue
- Williams, George Walton (1957), Ph.D. (Virginia), *Professor of English*, 6 Sylvan Road
- Williams, Kenny J. (1977), Ph.D. (Pennsylvania), *Professor of English*, 2727 Spencer Street
- Williams, Mary Lou (1977), D.F.A., L.H.D., *Artist-in-Residence in Jazz Studies*, 1502 Shepherd Street
- Williams, Redford Brown, Jr. (1972), M.D. (Yale), *Associate Professor of Psychiatry and Assistant Professor of Medicine*, 2742 Circle Drive
- Williamson, William H. (1976), S.T.D. (Emory), *Assistant Professor of Worship and Liturgy in the Divinity School*, 2027 Bivins Street
- Willis, William Hailey (1963), Ph.D. (Yale), *Professor of Greek in the Department of Classical Studies*, 1007 Vickers Avenue
- Wilson, Christopher J. (1978), M.D. (Baylor), *Associate in the Department of Obstetrics and Gynecology*, 2311 Wilson Street
- Wilson, James F. (1967), Ph.D. (Ohio State Univ.), *Professor of Civil Engineering*, 1109 Archdale Road
- Wilson, John (1968), D.Phil. (Oxford), *Associate Professor of Sociology*, 2223 Cranford Road
- Wilson, Robert L. (1970), Ph.D. (Northwestern), *Research Professor of Church and Society in the Divinity School*, 237 Monticello Avenue
- Wilson, Ruby L. (1959-70; 1971), Ed.D. (Duke), *Professor of Nursing and Assistant Professor of Community and Family Medicine*, 2436 Tryon Road
- Wilson, Thomas G. (1959), Sc.D. (Harvard), *Professor of Electrical Engineering*, 2721 Sevier Street
- Wilson, Timothy DeCamp (1977), Ph.D. (Michigan), *Assistant Professor of Psychology*, Apartment 4, 803 Demerius Street
- Wilson, Wilkie A., Jr. (1974), Ph.D. (Duke), *Adjunct Assistant Professor of Pharmacology and Assistant Medical Research Professor of Medicine*, 302 Watts Street
- Wilson, William P. (1961), M.D. (Duke), *Professor of Psychiatry*, 1209 Virginia Avenue
- Wing, Cliff W., Jr., (1965), Ph.D. (Tulane), *Professor of Psychology*, 2722 Spencer Street
- Wintermute, Orval Stewart (1958), Ph.D. (Johns Hopkins), *Professor of Religion*, 1103 North Duke Street
- Wise, Dwayne A. (1974-75; 1977), Ph.D. (Florida State), *Temporary Instructor in Zoology*, 5101 Lundy Drive, Raleigh, N.C.
- Withers, Loren Ralph (1949), M.S. (Julliard), *Professor of Music*, 2741 Dogwood Road
- <sup>229</sup>Witt, Ronald G. (1971), Ph.D. (Harvard), *Associate Professor of History*, 173 West Margaret Lane, Hillsborough, N.C.
- Wittels, Benjamin (1961), M.D. (Minnesota), *Professor of Pathology*, 2308 Prince Street
- Wolbarsht, Myron L. (1968), Ph.D. (Johns Hopkins), *Professor of Ophthalmology, Professor of Biomedical Engineering, Associate Professor of Physiology, and Lecturer in Psychology*, 1435 Acadia Street
- <sup>230</sup>Wolf, Richard Appleby (1977), Ph.D. (Oregon), *Visiting Associate Professor of Chemistry*, 510 Duluth Street

<sup>228</sup>Through 8-31-78.

<sup>229</sup>Sabbatical leave 1978-79.

<sup>230</sup>Through 6-30-78.



- Wolfe, Walter G. (1972), M.D. (Temple), *Associate Professor of Surgery*, 410 Clayton Road, Chapel Hill, N.C.
- Wolpert, Robert L. (1976), Ph.D. (Princeton), *Assistant Professor of Mathematics*, 2752 Middleton Street
- Wood, Peter H. (1975), Ph.D. (Harvard), *Associate Professor of History*, 107 Wake Street, Hillsborough, N.C.
- Woodbury, Max Atkin (1966), Ph.D. (Michigan), *Professor of Biomathematics in Community and Family Medicine and Professor of Computer Science*, 4008 Bristol Road
- <sup>231</sup>Woods, Nancy F. (1972), M.S.N. (Washington), *Associate Professor of Nursing*, 122 Hunter's Ridge Road, Chapel Hill, N.C.
- Woodward, Kent T. (1976), Ph.D. (Rochester), M.D. (Med. Coll. of South Carolina), *Associate Professor of Radiology*, 23 Cotswald Place
- Woodyard, Alma Lorraine (1954), M.Ed. (North Carolina at Greensboro), *Associate Professor of Physical Education*, Apartment 26-L, 880 Louise Circle
- Worde, Boyd T. (1958), M.D. (Tennessee), *Associate Professor of Radiology*, 2512 Sevier Street
- Workman, Joseph B. (1971), M.D. (Maryland), *Associate Professor of Radiology*, 219 Country Club Drive
- Worth, Fabienne Andre (1978), M.A. (North Carolina at Chapel Hill), *Visiting Lecturer in Romance Languages*, 209 Pritchard Avenue, Chapel Hill, N.C.
- Wray, John Harrison (1978), Ph.D. (North Carolina at Chapel Hill), *Visiting Assistant Professor of Political Science*, 1456 Smith Level Road, Chapel Hill, N.C.
- Wray, Julia Ann Hedgepeth (1955), M.F.A. (North Carolina at Greensboro), *Associate Professor of Physical Education*, 911 Carver Street
- <sup>232</sup>Wright, Donald (1967), Ph.D. (Purdue), *Associate Professor of Mechanical Engineering*, 5302 Stephens Lane
- Wyngaarden, James B. (1956-65; 1967), M.D. (Michigan), *Hanes Professor of Medicine*, 2 Heath Place
- <sup>233</sup>Wyrick, Linda C. (1972), Ph.D. (Arizona), *Assistant Professor of Medical Psychology in the Department of Psychiatry*, 3908 Wynford Road
- Yamanashi, Bill S. (1973), Ph.D. (Massachusetts Inst. of Tech.), *Assistant Clinical Professor of Ophthalmology*, 1907 House Avenue
- Yandle, David O. (1967), Ph.D. (North Carolina State), *Associate Professor of Forest Mathematics*, 2612 McDowell Road
- Yarger, William E. (1971), M.D. (Baylor), *Associate Professor of Medicine and Assistant Professor of Physiology*, 3406 Cambridge Road
- Yoder, Barbara A. (1975), M.S. (Florida State Univ.), *Associate in Psychiatric Recreation Therapy in the Department of Psychiatry*, Route 1, Box 262, Lichen Creek Farm, Timberlake, N.C.
- <sup>234</sup>Yoder, Karen K. (1974), M.N. (Emory), *Assistant Professor of Nursing*, Apartment 1-K, 1315 Morreene Road
- Yohe, William P. (1958), Ph.D. (Michigan), *Professor of Economics*, 4011 West Cornwallis Road
- You, Kwan-sa (1977), Ph.D. (Brandeis), *Assistant Professor of Pediatrics*, Apartment 31-C, 3231 Shannon Road
- Young, Charles R. (1954), Ph.D. (Cornell), *Professor of History*, 2929 Welcome Drive
- Young, Franklin W. (1944-50; 1968), Ph.D. (Duke), *Amos Ragan Kearns Professor of New Testament and Patristic Studies in the Divinity School*, 132 Pinecrest Road
- Young, Stephen Lowe (1977), M.D. (California at San Francisco), *Assistant Professor of Medicine*, 109 Carolina Forest, Chapel Hill, N.C.
- Young, W. Glenn, Jr. (1955), M.D. (Duke), *Professor of Surgery*, 3718 Eton Road
- Youngblood, David Abert (1977), M.D. (Med. Univ. of South Carolina), *Medical Research Associate in the Department of Anesthesiology*, Route 1, Box 307-B, Hillsborough, N.C.
- Younger, John G. (1974), Ph.D. (Cincinnati), *Assistant Professor of Classical Studies*, 1414 Dollar Avenue
- <sup>235</sup>Zalkind, Julie H. (1973), Ph.D. (Johns Hopkins), *Assistant Professor of Business Administration*, 3918 Wynford Drive
- <sup>236</sup>Zeitschel, Kathleen A. (1975), M.M.S. (Emory), *Associate in Physical Therapy*, Apartment 3-F, 2716 Middleton Street
- Ziesat, Harold A., Jr. (1976), Ph.D. (Arizona), *Assistant Professor of Medical Psychology in the Department of Psychiatry and Associate in Orthopaedic Surgery*, Building 5, Apartment G-0-2, 3536 Mayfair Street
- Zipp, John (1978), Ph.D. (Duke), *Instructor in Sociology*, 822 Green Street
- Zung, William W. K. (1966), M.D. (Texas), *Professor of Psychiatry*, 1816 Woodburn Road
- Zwadyk, Peter, Jr. (1971), Ph.D. (Iowa), *Associate Professor of Pathology and Associate Professor of Microbiology*, 4729 Stafford Drive

<sup>231</sup>Through 8-31-78.

<sup>232</sup>Sabbatical leave, spring 1978-79.

<sup>233</sup>Through 6-30-78.

<sup>234</sup>Leave of absence 9-1-78 through 8-31-80.

<sup>235</sup>Through 8-31-78.

<sup>236</sup>Through 3-24-78.



## Adjunct Faculty and Part-time Instructional Staff\*

- Abou-Donia, Amina (1977), Ph.D. (Alexandria University), *Visiting Assistant Professor of Chemistry, part-time*, Apartment 4, 2200 Elder Street
- Aitken, Paul Wesley (1964), Th.M. (Duke), *Chaplain and Part-time Assistant Professor of Clinical Pastoral Education, Divinity*, 2909 Harriman Drive
- Alborzi, Abdolvahab (1978), M.D. (Pahlavi), *Visiting Assistant Professor of Pediatrics*, Apartment G-0-2, 3523 Mayfair Street
- Allen, David G. (1976), M.A. (Duke), *Graduate Tutor in English*, 818 Buchanan Boulevard
- Allen, William R. (1978), M.A. (Alabama), *Graduate Tutor in English*, 2222 Elba Street
- Amaya, Marcelino (1966), M.D. (Nacional Automona de Mexico), *Assistant Professor of Psychiatry, part-time*, 2928 Friendship Road
- Armitage, Christopher M. (1966), Ph.D. (Duke), *Visiting Associate Professor, part-time, in English*, 2610 Stuart Drive
- Arrington, Larry J. (1978), B.A. (Drew), *Part-time Instructional Assistant in Management Sciences in the Department of Business Administration*, Apartment G, 205 Oregon Street
- Autry, Bruce C. (1976), M.A. (East Carolina), *Graduate Tutor in English*, Apartment C, 204 Alexander Street
- Baier, Rodger W. (1972), Ph.D. (Washington), *Adjunct Assistant Professor of Chemistry*, P.O. Box 338, Morehead, N.C.
- Bakry, Nabila M. S. (1978), Ph.D. (California at Riverside), *Visiting Professor of Pharmacology*, Apartment F, 2015 Yearby Avenue
- Beamud, Ana Marie (1975), M.A. (State Univ. of New York, Albany), *Part-time Instructor in Romance Languages*, 2226 Lafayette Street
- Bentov, Marilyn (1976), Ed.D. (Harvard), *Associate in the Department of Community and Family Medicine, part-time*, Apartment 17, 2330 Hilton Avenue
- Bilazarian, Peter (1977), B.A. (Harvard), *Part-time Instructor in Mathematics*, Apartment B-1, 700 Morreene Road
- Blake, Lewis de Veaux, III (1975), B.A. (Clemson), *Part-time Instructor in Mathematics*, 523 Morreene Road
- Blakley, Daniel L. (1977), B.A. (Virginia), *Part-time Instructor in Economics*, Apartment F, 1901 Erwin Road
- Bosky, Bernadette L. (1978), M.A. (Duke), *Graduate Tutor in English*, Apartment G, 1915 Erwin Road
- Boyd, Roy G. (1978), B.A. (New Mexico), *Part-time Instructor in Economics*, 913 Buchanan Boulevard
- Box, Elgene O. (1978), Ph.D. (North Carolina at Chapel Hill), *Part-time Instructor of Forestry*, Apartment 8-C, 5222 Kerley Road
- Brahos, Andrew D. (1978), B.S. (Butler), *Part-time Instructor in Mathematics*, 610 Douglas Street
- Briggs, Elizabeth H. (1976), M.A. (Tennessee), *Graduate Tutor in English*, Apartment 3, 303 East Trinity Avenue
- Bright, Olga Diane (1977), B.S. (Johnson & Wales Coll.), *Part-time Instructional Assistant in Management Sciences in the Graduate School of Business Administration*, Apartment 8, 121 North Duke University Road
- Brodsky, Marie K. (1978), M.S. (Southern Connecticut State Coll.), *Part-time Lecturer in Mathematics*, 919 Lambeth Circle
- Brown, Kendall W. (1978), M.A. (Duke), *Part-time Instructor in History*, Q-6 Old Well Apartments, Carrboro, N.C.
- Brown, Monika B. (1974), M.A. (Duke), *Graduate Tutor in English*, 2810 Erwin Road
- Buckner, Frank W. (1978), B.A. (North Carolina at Chapel Hill), *Graduate Assistant in the Divinity School*, P.O. Box 1206, Chapel Hill, N.C.
- Burke, Thomas D. (1978), Ph.D. (Colorado), *Visiting Part-time Instructor in Anthropology*, Route 1, Box 398-A, Garner, N.C.
- Byrd, Nancy (1976), M.A. (John Carroll), *Part-time Instructor in Romance Languages*, Apartment H-3-B, 1500 Duke University Road
- Callahan, Gaylor F. (1977), M.A. (North Carolina at Greensboro), *Graduate Tutor in English*, 811 Rankin Place, Greensboro, N.C.
- Callahan, Shirley E. (1972), M.P.H. (North Carolina at Chapel Hill), *Part-time Associate in Community and Family Medicine*, 14 Braddock Circle
- Callicutt, James L., Jr. (1977), M.A. (South Carolina), *Graduate Tutor in English*, Apartment 1-F, 1505 Duke University Road

<sup>237</sup>Through 6-30-78.

\*See also Medical School, page 61

- Camp, Claudia V.** (1978), M.Div. (Harvard), *Graduate Assistant in the Divinity School*, 1011 North Buchanan Boulevard
- Campbell, David P.** (1973), Ph.D. (Michigan), *Adjunct Professor of Psychology*, Route 3, Box 218, Greensboro, N.C.
- Cantor, Ann R.** (1977), M.D. (California at San Francisco), *Associate in Pediatrics, part-time*, 1022 Rose Hill Avenue
- Carmichael, Ann G.** (1978), M.D., Ph.D. (Duke), *Part-time Instructor in History*, Apartment 14-H, 2748 Middleton Street
- Chandra, Jagdish** (1974), Ph.D. (Rensselaer Polytechnic Inst.), *Adjunct Associate Professor of Mathematics*, 3522 Sheridan Drive
- Chapman, Reginald A.** (1978), B.Sc. (King's College), *Visiting Associate Professor of Physiology*, Box 3709 Medical Center
- Choudhury, Golam W.** (1974), Ph.D. (Columbia), *Adjunct Professor of Political Science*, 2909 Welcome Drive
- Ciftan, Mikael N.** (1977), Ph.D. (Duke), *Adjunct Professor of Physics*, 2606 Tryon Road
- Clauzier, Marie-Ange** (1978), B.A. (Grenoble), *Part-time Instructor in Romance Languages*, Box 1142, Trent Drive Hall
- Clayton, Thomas** (1978), M.A. (Duke), *Part-time Instructor in History*, 1307 Arnette Avenue
- Coles, Robert** (1973), M.D. (Columbia), *Visiting Research Professor of Policy Sciences, part-time, and Visiting Research Professor of Psychiatry, part-time*, 10 Old Chemistry
- Condrell, William** (1978), LL.B. (Harvard), *Lecturer, part-time, in Forestry*, 1250 Connecticut Avenue, N.W., Suite 800, Washington, D.C.
- Cook, Judith Walmsley** (1977), B.A. (Michigan), *Part-time Instructor in Psychology*, 141 Stateside Drive, Chapel Hill, N.C.
- Cotanch, Patricia H.** (1977), M.Ed. (Pittsburgh), *Assistant Professor of Nursing (part-time)*, 729 Blenheim Drive, Raleigh, N.C.
- Cox, Cherly A.** (1978), B.A. (York), *Part-time Instructor in Classical Studies*, Apartment 23-1, 311 South LaSalle Street
- Crimmins, Michael T.** (1977), B.A. (Hendrix Coll.), *Instructional Assistant in Chemistry*, 1719 North Roxboro Street
- Croft, Thomas A.**, (1977), A.B. (Duke), *Part-time Instructor in Management Sciences in the Graduate School of Business Administration*, Apartment G-0-8, 3545 Mayfair Street
- Cabbage, John** (1975), M.M. (Julliard), *Staff Associate in Music*, Route 2, Box 632, Mebane, N.C.
- Culbertson, Chicita F.** (1971), Ph.D. (Duke), *Lecturer and Senior Research Associate in Botany*, Route 7, George King Road
- Cummings, Richard** (1978), J.D. (Columbia), *Lecturer, part-time, in Forestry and Environmental Studies*, Box 349, Bridgehampton, N.Y.
- Dalldorf, Joanna S.** (1978), M.D. (Cornell), *Associate in the Department of Pediatrics (part-time)*, 11 Woodhaven Road, Chapel Hill, N.C.
- Davis, Lois L.** (1978), M.A. (North Carolina at Chapel Hill), *Part-time Instructor in Slavic Languages and Literatures*, Box 1262, Chapel Hill, N.C.
- Davison, Alexander T.** (1977), M.F. (Duke), *Lecturer, part-time, in Forestry*, Route 4, Box 525, Hillsborough, N.C.
- Dawson, John W.** (1974), Ph.D. (Washington), *Visiting Professor in Chemistry, part-time*, 5112 Stephens Lane
- Day, James F.** (1978), M.A. (Florida), *Graduate Tutor in English*, 207 East Trinity Avenue
- Decker, Joanne Lynn** (1977), M.A. (Duke), *Part-time Instructor in Economics*, Apartment 51-F, 311 South LaSalle Street
- Deis, Elizabeth J.** (1976), M.A. (Duke), *Graduate Tutor in English*, 203 Watts Street
- Detwiler, John C.** (1966), Th.M. (Duke), *Assistant Chaplain Supervisor at Duke Medical Center and Instructor in Pastoral Care in the Divinity School*, 2733 Spencer Street
- Deubner, David C.** (1975), M.D. (Rochester), *Assistant Professor of Community and Family Medicine, part-time*, 706 East Forest Hills Boulevard
- DeVries, Walter D.** (1973), Ph.D. (Michigan State), *Adjunct Associate Professor, part-time, in Policy Sciences*, 9 Bahama Drive, Wrightsville Beach, N.C.
- Dolan, Marie Elaine** (1977), M.A. (Duke), *Graduate Tutor in English*, Apartment G, 1025 Dacian Avenue
- Dorrance, M'Liss Gary** (1977), Diploma (National Ballet Academic School), *Part-time Instructor in Physical Education*, Apartment D-4 Village Green, Chapel Hill, N.C.
- Drew, Thomas L.** (1978), B.A. (Duke), *Part-time Lecturer in Management Sciences in the Graduate School of Business Administration*, 5217 Fairoaks Drive
- duRivage, Françoise B.** (1978), Maitrise (Sorbonne), *Part-time Instructor in Romance Languages*, Apartment 10-P, 1315 Morreene Road
- Dutrow, George F.** (1976), Ph.D. (Duke), *Adjunct Associate Professor of Forestry*, 3602 Saint Marks Road
- Dutton, John C., Jr.** (1975), Ph.D. (Duke), *Part-time Visiting Assistant Professor of Economics*, 312 Morreene Road

- Eaglen, Robert H. (1975), B.A. (Cleveland State Univ.), *Part-time Instructor in Anthropology*, Apartment 3, 1106 Alabama Avenue
- Elliott, Paul (1971), A.M. (Duke), *Part-time Lecturer in Computer Science*, Apartment 4-A, 1700 Chapel Hill Road
- Ellis, James T. (1978), B.S. (Duke), *Part-time Instructor in Computer Science*, Apartment 45-K, 311 South LaSalle Street
- Ennis, Catherine D. (1977), M.S. (North Carolina at Greensboro), *Part-time Instructor in Physical Education*, Apartment 28-D, 311 South LaSalle Street
- Erdberg, Claudia (1973), M.M. (Manhattan School of Music), *Artist Associate in Music*, 1604 Glendale Avenue
- Espey, John (1976), M.A. (North Carolina at Chapel Hill), *Part-time Instructor in Physical Education*, Apartment 9, 210 Pinegate Circle, Chapel Hill, N.C.
- Esthimer, Steven W. (1978), M.A. (Duke), *Graduate Assistant in the Divinity School*, 2321 Huron Street
- Evans, Frances C. (1973), M.M. (North Carolina at Chapel Hill), *Staff Associate in Music*, 1020 Demerius Street
- Everts, Janet M. (1978), M.Div. (Fuller Theological Seminary), *Graduate Assistant in the Divinity School*, 4211 Sunny Court
- Fairris, David H. (1978), B.A. (Washington), *Part-time Instructor in Economics*, 312 North Buchanan Boulevard
- Fiensy, David Arthur (1977), M.A. (Xavier), *Part-time Instructor in Religion*, 2607 East Main Street
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Watson, Lillie, *Supervisor of Gradel's at the Trent Drive Hall Dining Halls*, Route 1, Box 182-A  
Whitley, Clarence A., *Supervisor of the Storeroom for the West Campus Dining Halls*, 11 South Mickey  
Circle  
Williams, Doris, *Supervisor of the Oak Room, the West Campus Dining Halls*, 1415 Ridgeway Avenue

## MUSIC

Auld, Louis, Ph.D., *Record Librarian*, 211 Prince Street  
Bone, Allan Hadley, M.M., *Conductor of the Symphony Orchestra*, 2725 Sevier Street  
Bryan, Paul Robey, Ph.D., *Conductor of the Wind Symphony*, 1108 Watts Street  
Douglass, Fenner, M.M., *University Organist*, 1516 Woodburn Road  
Hammond, J. Samuel, M.S.L.S., *Music Librarian, Chapel Carillonneur*, 1406 West Markham Avenue  
Hanks, John Kennedy, M.A., *Director of the Opera Workshop*, 11 Scott Place  
Henry, James, M.M., *Director of the Marching Band*, Route 2, Box 516-C  
Herlinger, Jan, Ph.D., *Director of the Collegium Musicum*, 1026 Monmouth Avenue  
Kitchen, Dorothy, M.M., *Director of the String School*, Apartment N-1, 1600 Delaware Avenue  
Lynch, Jane, M.M., *Assistant Director of Choral Activities, Assistant to the Director of Chapel Music, and Assistant  
Chapel Organist*, Apartment 2-F, 700 Morreene Road  
Parkins, Robert, M.M.A., *Chapel Organist, Assistant Director of Chapel Music*, 1315 Morreene Road  
Smith, J. Benjamin, M.S.M., *Director of Chapel Music and Choral Conductor*, 2500 Glendale Avenue

## RELIGIOUS LIFE STAFF

Young, Robert T., B.D., *Minister to the University*, 3855 West Cornwallis Road  
Crotwell, Helen G., M.R.E., *Associate Minister to the University*, 2705 Vineyard Street  
Ferrell, Velma, B.D., *Chaplain to Baptist Students*, 118 Collums Road, Chapel Hill, N.C.  
Burke, Joseph A., Ph.D., *Chaplain to Catholic Students*, 211 McCauley Street, Chapel Hill, N.C.  
Shepherd, H. Bruce, Jr., D.D., *Chaplain to Episcopal Students*, 110 Arnette Avenue  
Schultz, Robert, A.B., *Contact Person for Jewish Students*, 310 Dacian Avenue  
Davis, Thomas C., M.A., *Chaplain to United Methodist-Presbyterian Students*, 2003 Ward Street  
Scott, Marjorie, B.A., *Chaplain to United Church of Christ Students*, Apartment 2, 304 Northwood Circle  
Acuff, Mark, A.B., *Inter-Varsity Christian Fellowship*, 2608 Elgin Street

## THE UNIVERSITY STORES

Rainey, Harry G., B.S., *General Manager Stores Operations*, 409 Riverdale Drive  
Rogers, Charles H., *Assistant General Manager of Operations and Personnel*, 2531 Wilson Street  
Bell, William G., A.B., *Office Manager*, 5006 Lazy Wood Lane  
Yorkey, Randall F., A.B., *Manager of University Stores*, Route 1, Box 63-R, Bahama, N.C.  
Tucker, Charles, *Assistant Manager, Marketing*, 5100 Russell Road  
Eidenier, Elon, A.B., *Manager of the Gothic Bookshop*, 127 East Union Street, Hillsborough, N.C.  
Hatley, Ron, A.B., *Manager of the University Bookstore*, P.O. Box 67, Bynum, N.C.  
Rhodes, Rayford G., *Manager of Vending Service*, Route 3, Box 282, Clayton, N.C.  
Peak, Ansel M., A.B., *Manager, Medical Center Bookstore*, 1023 West Trinity Avenue

## THE UNIVERSITY LIBRARIES

### The William R. Perkins Library

(Ranking titles of professional librarians are given in parentheses following position titles.)

Dunlap, Connie R., A.M.L.S., *University Librarian (Professor in the Faculty of Arts and Sciences)*, 2915 Friendship Road  
Merritt, Gertrude, A.B., *Associate University Librarian for Collection Development (Associate Professor in the Faculty of Arts and Sciences)*, 621 Swift Avenue  
Strowd, Elvin E., B.S.L.S., M.A., *Assistant University Librarian for Public Services (Librarian)*, 3425 Angus Road  
Dowell, David R., M.A., M.S.L.S., *Assistant University Librarian for Personnel and Staff Development (Associate Librarian)*, 4301 Malvern Road  
Gosling, William A., M.L.S., *Assistant University Librarian for Technical Services (Associate Librarian)*, 4339 Berini Drive  
Berger, Kenneth W., M.A., M.L.S., *Reference Librarian and Manuscript Cataloger (Assistant Librarian)*, Apartment 18, 18 Balmoray Court  
Bergholz, Donna C., A.M.L.S., *Monographic Cataloger (Associate Librarian)*, 211 Vance Street, Chapel Hill, N.C.  
Blakely, Florence E., M.A.L.S., *Head of the Reference Department (Librarian)*, 709 West Club Boulevard  
Branson, Barbara, M.S.L.S., *Principal Cataloger (Librarian)*, 427 Green Street  
Broadfoot, Winston, J.D., *Director of the George Washington Flowers Memorial Collection (Librarian)*, 14 Lakeshore Drive, Chapel Hill, N.C.  
Bullard, Scott, M.A., M.S.L.S., *Assistant Head, Acquisitions (Senior Assistant Librarian)*, Apartment 25-F, 200 Seven Oaks Road  
Burke, Serena S., M.S.L.S., *Assistant to the University Librarian for Grants and Special Projects (Senior Assistant Librarian)*, 3413 West Club Boulevard  
Canada, Mary, B.S.L.S., M.A., *Assistant Head of the Reference Department (Librarian)*, 1312 Lancaster Street  
Carter, Phyllis, B.S.L.S., *Monographic Cataloger (Senior Assistant Librarian)*, 303-2 Brookside Drive, Chapel Hill, N.C.  
Cook, Jean G., M.L.S., *Head of Serials Department (Associate Librarian)*, 16 Glenmore Drive  
Cox, Carolyn, M.L.S., *Serials Catalog Librarian (Assistant Librarian)*, Apartment 50, 500 DuPont Road  
Dawson, Mary H., M.S.L.S., *Monographic and Serials Cataloger (Librarian)*, 880 Louise Circle  
Eisenbeis, Kathleen, M.S.L.S., *Documents Librarian (Assistant Librarian)*, 2209½ Pike Street  
Erwin, William R., Jr., M.A., M.S.L.S., *Assistant Curator of Manuscripts for Cataloging (Associate Librarian)*, 2218 Myers Street  
Farris, Joyce, M.S.L.S., *Monographic Cataloger (Assistant Librarian)*, 921 North Buchanan Boulevard  
Ford, Emerson, B.D., *Interlibrary Loan Librarian*, 2201 ½ Summit Street  
Graham, Martha A., M.A., M.S.L.S., *Newspaper and Microfilm Librarian (Senior Assistant Librarian)*, 412 East King Street Extension, Hillsborough, N.C.  
Grzybowski, Zofia, M.A., M.S.L.S., *Librarian for Slavic Materials (Associate Librarian)*, 2605 University Drive  
Harkins, Diane G., M.S.L.S., *Head, Serials Cataloging Section (Senior Assistant Librarian)*, 323 Brandywine, Chapel Hill, N.C.  
Hotelling, William E., *Monographic Cataloger (Senior Assistant Librarian)*, 2715 Shaftsbury Drive  
Jones, Bertha, B.S.L.S., *Monographic Cataloger (Librarian)*, 1015 Anderson Street  
Kline, Lawrence O., B.D., M.A., M.L.S., *Head, Monographic Cataloging Department (Librarian)*, Box 4768 Duke Station  
Knapp, Sharon E., M.A.T., *Catalog Librarian of Manuscript Department (Senior Assistant Librarian)*, 110 Wicklow Lane  
Land, Joline R., M.A., M.S.L.S., *Assistant Head, Serials Department (Associate Librarian)*, Apartment E-5, 2106 Front Street

Leonardi, Catherine R., M.A., M.S.L.S., *Monographic Cataloger (Senior Assistant Librarian)*, 860 Louise Circle

Leyte-Vidal, Celia, M.S.L.S., *Monographic Cataloger (Associate Librarian)*, 4168 Deepwood Circle

Leyte-Vidal, Jesus, M.S.L.S., J.D., *Librarian for Latin American Materials (Librarian)*, 4168 Deepwood Circle

Lin, Wen-Chouh, M.A., M.S.L.S., *Monographic Cataloger (Senior Assistant Librarian)*, 920 Lambeth Circle

Lively, Eva, M.L.S., *Head, Copy Cataloging Unit (Senior Assistant Librarian)*, Box 4042 Duke Station

MacDonald, Susan H., M.L.S., *Head of Public Documents Department (Senior Assistant Librarian)*, Apartment 16, 2132 Bedford Street

Maheshwray, Avinash, Dip.L.S., M.A., *Librarian for South Asia Materials (Librarian)*, 1010 Wyldewood Road

Mayes, Otto W., Jr., *Data Processing Specialist*, Box 2542, West Durham Station

Miller, Margaret L., M.S.L.S., *Monographic Cataloger (Senior Assistant Librarian)*, 111 Northampton Terrace, Chapel Hill, N.C.

Mishler, Mary Catherine, M.A.L.S., *Documents and Maps Librarian (Senior Assistant Librarian)*, 2402 Glendale Avenue

Morris, Janie C., M.L.S., *Monographic Cataloger (Senior Assistant Librarian)*, Route 2, Box 470, Hillsborough, N.C.

Nease, Pauline L., A.B., *Monographic Cataloger (Associate Librarian)*, 1010 Rosehill Avenue

Nelius, Albert A., M.Div., M.S.L.S., *Head Circulation Department (Senior Assistant Librarian)*, P.O. Box 3066

New, Toby S., A.B., *Monographic Cataloger (Senior Assistant Librarian)*, Route 3, Box 77F, Hillsborough, N.C.

Plowden, Mary E., A.B.L.S., *Head of Acquisitions Department (Librarian)*, 619 Swift Avenue

Rees, Joe C., M.S.L.S., *Reference Librarian (Associate Librarian)*, Pleasant Green Road

Russell, Mattie, Ph.D., *Curator of Manuscripts (Librarian)*, 2209 Woodrow Street

Sharpe, John L., III, Ph.D., *Curator of Rare Books (Associate Librarian)*, 310 East Markham Avenue

Stone, Ann F., M.S.L.S., *Undergraduate Librarian (Associate Librarian)*, 5114 Pine Trail Drive

Sturgeon, Jane, B.S.L.S., *Head Rare Book Cataloging (Librarian)*, 1607 Peace Street

Van Goethem, Geraldine B., M.S.L.S., *Serials Cataloger (Senior Assistant Librarian)*, 829 Tinkerbell Road, Chapel Hill, N.C.

Vogel, Jane G. McKean, M.S.L.S., *Reference Librarian (Associate Librarian)*, 1212 Woodburn Road

Weldon, Jean, M.S.L.S., *Serials Cataloger (Senior Assistant Librarian)*, Apartment 28-K, 707 Louise Circle

Wells, David B., M.A., M.S.L.S., *Reference Librarian (Assistant Librarian)*, Apartment E-10, 700 Morreene Road

Whittington, Erma P., B.S.L.S., M.A., *Librarian for the Hubbell Center, Manuscript Department (Librarian)*, 2402 Wrightwood Avenue

#### East Campus Library

Knoerr, Margaret K., M.S.L.S., *Head, Reference Department (Associate Librarian)*, 208 Hillsborough Street, Chapel Hill, N.C.

Young, Betty, M.S.L.S., *Head of the Circulation Department (Associate Librarian)*, 2929 Welcome Drive

#### Art History Library

Hassold, Edith, Dip.L.S., *Librarian (Senior Assistant Librarian)*, Apartment 6, 2030 Bedford

#### Biology-Forestry Library

Livingstone, Bertha R., M.A., M.S.L.S., *Librarian (Associate Librarian)*, 2827 Ridge Road

#### Chemistry Library

Smith, Eric J., *Librarian (Senior Assistant Librarian)*, 110 Woodridge Drive

#### Divinity School Library

Farris, Donn Michael, M.S. in L.S., M.Div., *Librarian (Professor of Theological Bibliography)*, 921 North Buchanan Boulevard

Leonard, Harriet V., M.S. in L.S., M.Div., *Reference Librarian (Librarian)*, Apartment F-1-B, University Apartments

#### School of Engineering Library

Wilson, Alice T., M.S.L.S., *Librarian (Senior Assistant Librarian)*, 331 Flemming Drive

#### Music Library

Hammond, J. Samuel, M.S.L.S., *Librarian (Senior Assistant Librarian)*, Apartment A, 1406 West Markham Avenue



### Physics-Mathematics Library

Wilkins, Mary Ann, M.S.L.S., *Librarian (Senior Assistant Librarian)*, Apartment 88-C, 3022 Chapel Hill Road

### Law School Library

Price, Kathleen, M.S., J.D., *Law Librarian (Associate Professor of Law)*, 2222 West Club Boulevard  
Sutton, Barbara, J.D., M.L.S., *Associate Librarian (Senior Assistant Librarian)*, Apartment 5-A, 624 South LaSalle Street

Denson, Janeen, M.S.L.S., *Circulation Librarian (Senior Assistant Librarian)*, 602 Red Carriage  
Germain, Claire, Lic. es Letters, Lic. en Droit, M.C.L., M.L.L., *Reference/Documents Librarian (Senior Assistant Librarian)*, Apartment 22, 2132 Bedford Street

Kott, Kathy, M.S.L.S., *Cataloging Librarian (Senior Assistant Librarian)*, 302A Mason Farm Road, Chapel Hill, N.C.

Martin, Peggy, M.L.S., *Acquisitions Librarian (Senior Assistant Librarian)*, Route 8, Box 438, Chapel Hill, N.C.

Wolf, Gretchen, M.S., *Cataloging Librarian (Assistant Librarian)*, Route 2, Box 408-H, Hillsborough, N.C.

### Medical Center Library

Bird, Warren P., M.S., *Director (Associate Professor of Medical Literature)*, 35 Stoneridge Circle

Brown, Mary Ann, M.A. (L.S.), *Chief of Reader Services (Librarian)*, 3062-F Colony Road

Cavanagh, G. S. Terence, B.L.S., *Curator of the Trent Collection (Professor of Medical Literature)*, Box 3044, West Durham Station

Feinglos, Susan, M.L.S., *Reference Librarian (Senior Assistant Librarian)*, 20 Scott Place

Kruse, Kathryn, M.L.S., *Head Reference Services (Associate Librarian)*, 2116 Front Street, Carver Terrace, D-5

Porter, Katherine, M.S., *Cataloger (Senior Assistant Librarian)*, 1009 Archdale Drive

Reeves, Virginia, M.S.L.S., *Reference Librarian (Senior Assistant Librarian)*, Apartment 9-U, 1315 Morreene Road

Smith, Susan C., M.F.A., *Library Conservator*, 8 Chancery Place

Tatum, Constance M., M.S.L.S., *Chief Cataloger (Librarian)*, 610 Massey Avenue

Wheeler, Eula, M.S.L.S., *Acquisitions Librarian (Associate Librarian)*, 28 Mt. Bolus Road, Chapel Hill, N.C.

Woodburn, Judy, M.S.L.S., *Collections Librarian (Associate Librarian)*, 3062-F Colony Road

### Medical Sciences Branch

De Turk, Virginia, *Librarian*, 114 Newell Street

### EQUAL OPPORTUNITY OFFICE

Burke, Delores L., M.A., *Director*, 1404 The Oaks, Chapel Hill, N.C.



# Government and Administrative and Instructional Staff

The University Trustees	35
Trustees Emeriti	20
General Administration	26
Faculty and Administrators Emeriti	147
Instructional Staff (regular, visiting, and part-time) <sup>1</sup>	1690
Professors—458	
Associate Professors—352	
Assistant Professors—391	
Associates—105	
Instructors—33	
Lecturers—1	
Visiting Professors and Lecturers—21	
Professors—6	
Associate Professors—2	
Assistant Professors—12	
Associates—0	
Lecturers—1	
Instructors—0	
Part-Time Adjunct Faculty and Instructional Staff (except Medical School)—273	
Part-Time Adjunct Faculty, Medical School—56	
Research Associates	214
Clinical Faculty, Medical School	287
Education Administration <sup>2</sup>	24
Business Administration <sup>3</sup>	29
Alumni Affairs	8
Institutional Advancement <sup>4</sup>	19
University Relations <sup>5</sup>	17
Student Affairs <sup>6</sup>	7
Other Offices and Staff <sup>7</sup>	105
Art—3	
Athletics—34	
Audio Visual Education-Medical Center—6	
Duke University Press—8	
Food Services—31	
Music—5	
Religious Life Staff—9	
University-Stores—9	
The University Libraries <sup>8</sup>	77
Equal Opportunity Office	1
TOTAL	2706

<sup>1</sup>Includes 17 officers listed with General Administration.

<sup>2</sup>Does not include 15 listed with General Administration; 30 with academic rank listed with Instructional Staff; 4 listed with Institutional Advancement.

<sup>3</sup>Does not include 5 listed with General Administration.

<sup>4</sup>Does not include 1 listed with General Administration.

<sup>5</sup>Does not include 1 listed with Alumni Affairs.

<sup>6</sup>Does not include 1 listed with General Administration; 2 listed with Educational Administration; 2 with academic rank listed with Instructional Staff.

<sup>7</sup>Does not include 15 with academic rank listed with Instructional Staff.

<sup>8</sup>Does not include 6 with academic rank listed with Instructional Staff.

# Appendix



## Government

### 1. THE INDENTURE OF TRUST BY WHICH THE UNIVERSITY WAS CREATED

Among the provisions of James B. Duke's Indenture of Trust was an educational institution to be known as Duke University, to the building and support of which he made provision at the time of execution of the Indenture and later by additions thereto by the operation of his will. In respect to Duke University the Indenture contains the following provisions:

I.(In Article FOURTH) The Trustees hereunder are hereby authorized and directed to expend as soon as reasonably may be a sum not exceeding Six Million Dollars of the corpus of this trust in establishing at a location to be selected by them within the State of North Carolina an institution of learning to be known as Duke University, for such purpose to acquire such land and erect and equip thereon such buildings according to such plans as the Trustees may in their judgment deem necessary and adopt and approve for the purpose, to cause to be formed under the laws of such state as the Trustees may select for the purpose a corporation adequately empowered to own and operate such properties under the name of Duke University as an institution of learning according to the true intent hereof, and convey to such corporation when formed the said lands, buildings and equipment upon such terms and conditions as that such corporation may use the same only for such purposes of such university and upon the same ceasing to be so used then the same shall forthwith revert and belong to the Trustees of this trust as and become a part of the corpus of this trust for all the purposes thereof.

However, should the name of Trinity College, located at Durham, North Carolina, a body politic and incorporate, within three months from the date hereof (or such further time as the Trustees hereof may allow) be changed to Duke University, then, in lieu of the foregoing provisions of this division "FOURTH" of the Indenture, as a memorial to his father, Washington Duke, who spent his life in Durham and whose gifts, together with those of Benjamin N. Duke, the brother of the party of the first part and of other members of the Duke family, have so largely contributed toward making possible Trinity College at that place, he directs that the Trustees shall expend of the corpus of this trust as soon as reasonably may be a sum not exceeding Six Million Dollars in expanding and extending said University, acquiring and improving such lands, and erecting, removing, remodeling and equipping such buildings, according to such plans, as the Trustees may adopt and



approve for such purpose to the end that said Duke University may eventually include Trinity College as its undergraduate department for men, a School of Religious Training, a School for Training Teachers, a School of Chemistry, a Law School, a Co-ordinate College for Women, a School of Business Administration, a Graduate School of Arts and Sciences, a Medical School and an Engineering School, as and when funds are available.

II.(In Article FIFTH) Thirty-two per cent of said net amount not retained as aforesaid for addition to the corpus of this trust shall be paid to that Duke University for which expenditures of the corpus of the trust shall have been made by the Trustees under the "Fourth" division of this Indenture so long as its name shall be Duke University and it shall not be operated for private gain, to be utilized by its Board of Trustees, in defraying its administration and operating expenses, increasing and improving its facilities and equipment, the erection and enlargement of buildings and the acquisition of additional acreage for it, adding to its endowment or in such other manner for it as the Board of Trustees of said institution may from time to time deem to be to its best interests, provided that in case such institution shall incur any expense or liability beyond provisions already in sight to meet same, or in the judgment of the Trustees under this Indenture be not operated in a manner calculated to achieve the results intended hereby, the Trustees under this Indenture may withhold the whole or any part of such percentage from said institution so long as such character of expense or liabilities or operations shall continue, such amounts so withheld to be in whole or in part either accumulated and applied to the purposes of such University in any future year or years, or utilized for the other objects of this Indenture, or added to the corpus of this trust for the purpose of increasing the principal of the trust estate, as the Trustees may determine.

III.(In Article SEVENTH) I have selected Duke University as one of the principal objects of this trust because I recognize that education, when conducted along sane and practical, as opposed to dogmatic and theoretical, lines, is, next to religion, the greatest civilizing influence. I request that this institution secure for its officers, trustees, and faculty men of such outstanding character, ability, and vision as will insure its attaining and maintaining a place of real leadership in the educational world, and that great care and discrimination be exercised in admitting as students only those whose previous records show a character, determination, and application evincing a wholesome and real ambition for life. And I advise that the courses at this institution be arranged, first, with special reference to the training of preachers, teachers, lawyers and physicians, because these are most in the public eye, and by precept and example can do most to uplift mankind, and, second, to instruction in chemistry, economics, and history, especially the lives of the great of the earth, because I believe that such subjects will most help to develop our resources, increase our wisdom and promote human happiness.

IV.(In Article THIRD) As respects any year or years and any purpose or purposes for which this trust is created (except the payments hereinafter directed to be made to Duke University), the Trustees in their uncontrolled discretion may withhold the whole or any part of said incomes, revenues and profits which would otherwise be distributed under the "Fifth" division hereof, and either (1) accumulate the whole or any part of the amount so withheld for expenditures (which the Trustees are hereby authorized to make thereof) for the same purposes in any future year or years, or (2) add the whole or any part of the amounts so withheld to the corpus or the trust, or (3) pay, apply and distribute the whole or any part of said amounts to and for the benefit of any one or more of the other purposes of this trust, or (4) pay, apply and distribute the whole or any part of said amounts to or for the benefit of any such like charitable, religious or educational purpose within the State of North Carolina and/or the State of South Carolina, and or any

such like charitable hospital purpose which shall be selected therefore by the affirmative vote of three fourths of the then Trustees at any meeting of the Trustees called for the purpose, complete authority and discretion in and for such selection and utilization being hereby given the Trustees in the premises.

## 2. RESTATED CHARTER OF DUKE UNIVERSITY

**Section 1.** That A. P. Tyler, J. H. Southgate, B. N. Duke, G. A. Oglesby, V. Ballard, J. A. Long, J. F. Bruton, J. N. Cole, F. A. Bishop, J. G. Brown, C. W. Toms, J. W. Alspaugh, W. R. Odell, J. A. Gray, F. Stikeleather, Kope Elias, S. B. Turrentine, P. H. Hanes, T. F. Marr, G. W. Flowers, M. A. Smith, R. H. Parker, W. J. Montgomery, F. M. Simmons, O. W. Carr, R. A. Mayer, N. M. Journey, Dred Peacock, B. B. Nicholson, W. G. Bradshaw, E. T. White, T. N. Ivey, J. B. Hurley, R. L. Durham, W. C. Wilson, and their associates and successors shall be, and continue as they have been, a body politic and corporate under the name and style of "DUKE UNIVERSITY," and under such name and style shall have perpetual existence and are hereby invested with all the property and rights of property which now belong to the said corporation, and said corporation shall henceforth and perpetually, by the name and style of "DUKE UNIVERSITY", hold and use all the authority, privileges, and possessions it had or exercised under any former title and name, and be subject to all recognized legal liabilities and obligations now outstanding against such corporations.

**Section 2.** That the purposes for which such corporation is organized are to acquire, own, operate, provide, maintain and perpetuate an institution of higher learning or other institutions of learning and all properties, facilities and services necessary or appropriate in connection therewith; to acquire, own, operate, provide, maintain and perpetuate hospital facilities to serve and benefit the general public; to acquire, own, operate, provide, maintain and perpetuate such other institutions, organizations, associations, clinics, corporations, partnerships, properties, facilities and services as are appropriate in furtherance of the educational, charitable, scientific, literary or public service purposes; and generally to have and exercise all powers granted to non-profit corporations under the law of the State of North Carolina for any lawful education, charitable, scientific, literary or public service purposes; Provided, however, that notwithstanding any other provision of these articles, the corporation shall not carry on any other activities not permitted to be carried on (a) by a corporation exempt from federal income tax under Section 501 (c) (3) of the Internal Revenue Code of 1954, as amended (or the corresponding provision of any future United States Internal Revenue law) or (b) by a corporation, contributions to which are deductible under Sections 170(c) (2), 2055 and 2522 of the Internal Revenue Code of 1954, as amended (or the corresponding provisions of any future United States Internal Revenue law).

**Section 3.** That the Trustees shall be thirty-six in number, of whom twelve shall be elected by the North Carolina Conference of the United Methodist Church; twelve by the Western North Carolina Conference of the said church; and twelve by the graduates of said University; Provided, however, that no person shall be elected a Trustee till he has first been recommended by a majority of the Trustees present at a regular meeting; and the Trustees shall have power to remove any member of their body who may remove beyond the boundary of the State or who may refuse or neglect to discharge the duties of a Trustee. The term of office of Trustees shall be six years, and they shall be so arranged that four Trustees shall be elected by each Conference and four by the graduates every two years. The Trustees shall regulate by bylaws the manner of election of the Trustees to be chosen by the graduates. Should there exist a vacancy by death, resignation, or otherwise of any Trustee, the same shall be filled for the unexpired term by the

Board of Trustees. That the present Trustees shall continue and remain in office during the term for which they have been heretofore respectively elected.

**Section 4.** That the said corporation shall be under the supervision, management and government of a president and such other persons as said Trustees may appoint; the said president, with the advice of the other persons so appointed, shall from time to time make all needful rules and regulations for the internal government of said University and prescribe the preliminary examinations and the terms and conditions on which pupils shall be received and instructed.

**Section 5.** That said Trustees shall have power to make such rules, regulations and bylaws and to take such other action not inconsistent with the Constitution of the United States and of the State of North Carolina as may be necessary or appropriate for the good government of the corporation and its various operations and management of the property and funds of the same, and to exercise all powers granted to non-profit corporations under the laws of the State of North Carolina.

**Section 6.** That the Trustees shall have power to fix the time of holding their annual and other meetings, to elect a president and professors for said University, to appoint an executive committee to consist of not less than seven members, which committee shall control the internal regulations of said University and fix all salaries and emoluments, and to do all other things necessary for an institution of learning not inconsistent with the laws of this State and of the United States.

**Section 7.** That the Faculty and Trustees shall have the power of conferring such degrees and marks of honor as are conferred by colleges and universities generally; and that five trustees shall be a quorum to transact business.

**Section 8.** Upon the dissolution of the corporation or the winding up of its affairs, the assets of the corporation shall be distributed exclusively to educational, charitable, religious, scientific, literary or other organizations which would then qualify under the provisions of Section 501(c) (3) of the Internal Revenue Code and the Regulations thereunder as they now exist or as they may hereafter be amended.

**Section 9.** That all laws and parts of laws or of the Charter heretofore granted which are in conflict with this act are hereby repealed.

**Section 10.** That this act shall be in force from and after its ratification and acceptance by the Board of Trustees.

This Restated Charter purports merely to restate but not to change the provisions of the original Articles of Incorporation as supplemented and amended; and there is no discrepancy, other than as expressly permitted by Section 55A-37.1 of the General Statutes of North Carolina, between said provisions and the provisions of this Restated Charter.

### **3. THE BYLAWS OF THE UNIVERSITY**

#### **Article I. Aims**

1. The aims of Duke University are to assert a faith in the eternal union of knowledge and religion set forth in the teachings and character of Jesus Christ, the Son of God; to advance learning in all lines of truth; to defend scholarship against all false notions and ideals; to develop a Christian love of freedom and truth; to promote a sincere spirit of tolerance; to discourage all partisan and sectarian strife; and to render the largest permanent service to the individual, the state, the nation, and the church. Unto these ends shall the affairs of this University always be administered.



## Article II. Board of Trustees

1. Powers. All powers of the University shall be vested in a Board of Trustees consisting of thirty-six elected members.

2. Nomination and Elections. The Trustees shall be elected as follows: twelve by the North Carolina Conference of the Methodist Church; twelve by the Western North Carolina Conference of the Methodist Church; and twelve by the graduates of Duke University. Each year a roster of nominees shall be referred to the Board by a committee of two faculty members elected by the principal faculty council, two students elected by the principal student council, the president of the Alumni Association and the President of the University as Chairman. The President shall add to the roster nominees proposed by individual students, faculty members and Trustees. For positions to be filled by the graduates of Duke University, the President shall place on the roster nominees proposed by the officers of the National Council and of the General Alumni Association. The Board, after hearing the recommendations of the Executive Committee, and by a majority of the Trustees present at any regular meeting, shall recommend the persons to be elected Trustees and submit its recommendations to the appropriate conference of the Methodist Church and the graduates.

No person who shall have attained the age of seventy years shall be elected a Trustee.

3. Term. The term of office of a Trustee shall be six years, beginning on the first day of July following election. Terms shall be so arranged that four Trustees shall be elected by each Conference and four by the graduates every two years. No person shall serve more than two consecutive six-year terms, with renewed eligibility for election to the Board following not less than two years absence of membership; provided that Trustees presently (September, 1970) serving a second full term are eligible for re-election for one additional term without an absence of two years.

4. Vacancies. Any vacancy in the membership of the Board shall be filled for the unexpired term by a majority vote of the Trustees present at a regular meeting of the Board from the roster of nominees.

5. Retirement. A Trustee shall retire on the first day of July after he attains the age of seventy, provided however, that Trustees serving on the Board as of September 1970 may complete their current terms, adjusted to July 1. A Trustee who would attain the age of seventy years during a two-year period of ineligibility shall retire at the end of the term for which he was elected, adjusted to July 1.

6. The aforesaid adjustments to July 1 shall reduce by six months the terms of Trustees serving on the Board as of January 1, 1974.

7. Emeritus. The Board may elect a retiring Trustee a Trustee Emeritus. Trustees Emeriti shall be entitled to receive notice of all meetings of the Board and attend and participate in such meetings, but shall not have the right to vote. Trustee Emeriti shall be eligible for membership on any standing committee other than the Executive Committee.

8. Removal. Any Trustee who may refuse or neglect to discharge the duties of a Trustee may be removed by the affirmative vote of three-fourths of the members of the entire Board of Trustees.

## Article III. Meetings of the Board

1. Annual Meeting. Annual meetings of the Board of Trustees shall be held on the day next preceding the day on which the graduation exercises take place.

2. Regular Meetings. Regular meetings of the Board shall be held on the Saturday preceding the day on which Founders' Day is celebrated, on the first Friday in March, and on the last Saturday in September.



3. Special Meetings. Special meetings shall be held upon the call of the Chairman, or upon written request of twelve or more Trustees addressed to the Secretary, with a copy to the Chairman specifying the business to be transacted at the meeting.

4. Notice. The Secretary shall give at least five days' notice to each member of the Board stating the time and place of all meetings, and the purpose of any special meeting.

5. Place. All meetings of the Board of Trustees shall be held at Duke University in the City of Durham, North Carolina, except that the Trustees by vote, or written assent, of a majority of the then members of the Board may designate another place for any meeting.

6. Quorum. A majority of the then members of the Board of Trustees shall be a quorum for the transaction of business.

#### **Article IV. Officers of the Board**

1. Officers of the Board. The officers of the Board shall be a Chairman, a Vice-Chairman and a Secretary.

2. Election. The officers of the Board of Trustees shall be elected at its annual meeting for a term of one year or until their successors are elected and qualified.

3. Duties.

a. The Chairman shall preside at all meetings of the Board, shall represent the Trustees at public meetings of the University, and shall be a member of and Chairman of the Executive Committee.

b. The Vice Chairman shall perform the duties of the Chairman in the absence or disability of the Chairman, or in the event of a vacancy in that office.

c. The Secretary of the University shall also be the Secretary of the Board of Trustees. He shall record the minutes of all meetings of the Board and its Executive Committee, and shall have custody of the Charter, Bylaws, minutes, records and other documents of the Board and its Committees. The Secretary shall send a copy of the minutes to each member of the Board promptly after each meeting of the Board and of the Executive Committee.

4. Vacancies. A vacancy in any office of the Board of Trustees may be filled for the unexpired term by the Board of Trustees.

#### **Article V. Committees of the Board**

1. Committees. The standing committees of the Board shall be:

- a. The Executive Committee
- b. The Business and Finance Committee
- c. The Building and Grounds Committee
- d. The Institutional Advancement Committee
- e. The Academic Affairs Committee
- f. The Medical Center Affairs Committee

The Board may authorize other committees from time to time.

2. Membership. At each annual meeting, the Board of Trustees shall elect the Chairmen (who shall be Trustees) and other Trustee members of the standing committees to serve for two years, beginning July 1. The Chairman of the Board, the Vice Chairman of the Board, and the President of the University shall be members of the Executive Committee. The President of the University shall be a member of all other standing committees of the Board.

Nominations of faculty and student members shall be for one year terms from lists of prospects developed by the President in consultation with representative student and faculty groups.

The number of Trustee members and non-Trustee members of any standing committee shall be determined by the Board of Trustees after receiving the recommendation of the committee chairman, and the Trustees may authorize and elect such committee members at any meeting in addition to the annual meeting.

Insofar as practical, membership on the standing committees should be rotated.

The Committees of the Board shall have the powers and duties set forth in these Bylaws and such other powers and duties as the Board may delegate to them. They shall exercise their powers and perform their duties subject to the direction and approval of the Board. They may from time to time make recommendations to the Board for the establishment of new policies or any change in existing policies, but without decision-making authority except pursuant to specific delegation by the Board or the Executive Committee.

3. Vacancies. Any vacancy in the membership of a standing committee shall be filled by the Chairman of the Board of Trustees after consultation with the President of the University.

4. Meetings. Each standing committee shall meet at such times and places and upon such notice as it may determine, and shall file a copy of the minutes of each meeting with the Secretary of the University.

5. Quorum. A majority of the then members of a standing committee shall be a quorum for the transaction of business.

## **Article VI. Executive Committee**

1. Membership. The Chairman of the Board (to serve as Chairman), the Vice Chairman of the Board (to serve as Vice Chairman), the President of the University, the Chairman of each standing committee, and not more than three Trustee members at large shall constitute the Executive Committee of the Board.

2. Powers and Duties. The Executive Committee shall:

- a. Subject to the provisions of the Charter and these Bylaws exercise all powers of the Board of Trustees in the interim between meetings of the Board.
- b. Appoint an Investment Committee of not less than five members, at least two of whom shall be Trustees, with the other members being selected from Trustees, officers, and alumni of Duke University, and Trustees and officers of The Duke Endowment, with such powers and duties as may be assigned to it by the Executive Committee.
- c. Coordinate the activities of the other standing committees.
- d. Exercise other duties as prescribed in the Charter or as may be delegated by the Board of Trustees.
- e. Report its actions to the Board of Trustees.

## **Article VII. Business and Finance Committee**

1. Membership. The Business and Finance Committee shall be composed of not less than four Trustees, at least one faculty member, at least one student and the Vice President for Business and Finance, *ex officio*.

2. Powers and Duties. The Business and Finance Committee shall:

- a. Keep informed on, consider proposals for, and make recommendations with respect to, the general business affairs and financial organization of the University.
- b. Receive and review the annual budgets and recommend their approval or modification.

- c. Maintain an ongoing analysis and review of monthly operating statements, periodic construction summary, and internal audit reports.
- d. Recommend the annual report of the auditors and submit it with recommendations for action.

The Committee shall report its findings and recommendations to the Board of Trustees or the Executive Committee.

### **Article VIII. Building and Grounds Committee**

1. **Membership.** The Building and Grounds Committee shall be composed of not less than five Trustees, at least one faculty member, at least one student, and the Vice President for Business and Finance, *ex officio*.

2. **Powers and Duties.** The Building and Grounds Committee shall consider proposals for, and make recommendations with respect to:

- a. Siting of all buildings and related appurtenances such as utilities, roads, and parking areas.
- b. Commissioning of Project Architects and Engineers, and approval of proposed contractors for construction projects.
- c. Evaluation and promulgation of a continuing Master Plan for long-range development of the total physical environment of the University, including inherent standards of aesthetics and quality.
- d. Evaluation of design characteristics of individual projects for adherence to established standards.
- e. Major renovation work.
- f. Naming of facilities and parts of facilities.

The Committee shall review priorities for construction and shall have authority to accept all new construction on behalf of the University, but shall not incur any expenses not previously authorized by the Board of Trustees or the Executive Committee.

The Committee shall report its findings and recommendations to the Board of Trustees or the Executive Committee.

### **Article IX. Institutional Advancement Committee**

1. **Membership.** The Institutional Advancement Committee shall be composed of not less than five Trustees, at least one faculty member, and at least one student. Not less than three of the Trustee members shall be alumni of the University.

2. **Powers and Duties.** The Institutional Advancement Committee shall consider proposals for, make recommendations with respect to, and assist the President in, the financial development, fund raising, public relations, and alumni affairs of the University, and carry out other projects and assignments as directed by the Board.

The Committee shall report its findings, recommendations and results to the Board of Trustees or the Executive Committee.

### **Article X. Academic Affairs Committee**

1. **Membership.** The Academic Affairs Committee shall be composed of not less than six Trustees, not less than two faculty members, not less than two students, and the Provost, *ex officio*.

2. **Powers and Duties.** The Academic Affairs Committee shall:

- a. Consider proposals for, and make recommendations with respect to, the educational role of each school, college, and unit of the University and for the University as a whole; provisions for the admission of

students at all levels, student life and activities; educational, research, and library programs; and the coordination of all educational activities.

- b. Promote and coordinate activities of the Boards of Visitors, review their findings, and transmit their reports to the President, and to the Board of Trustees. The President shall appoint the members of the Boards of Visitors.
- c. Designate five Trustees who, along with an equal number of faculty members designated by the President, and the President, *ex officio*, shall serve as a Committee on Honorary Degrees to make recommendations to the University faculty and the Board of Trustees.
- d. Serve as a Committee on Earned Degrees.
- e. Serve as liaison with the University faculty with respect to academic affairs.

The Committee shall report its findings and recommendations to the Board of Trustees or the Executive Committee.

#### **Article XI. Medical Center Affairs Committee**

1. **Membership.** The Medical Center Affairs Committee shall be composed of not less than six Trustees; at least two faculty members; at least two students; the Chief of Staff of Duke Hospital, *ex officio*; and the Vice President for Health Affairs, *ex officio*.

2. **Powers and Duties.** The powers and duties of the Medical Center Affairs Committee are limited in scope to the School of Medicine, the School of Nursing, Allied Health Programs and their related libraries, and to Duke, Highland, and Sea Level Hospitals, and their related libraries. Within these limitations, the powers and duties of the Medical Center Affairs Committee shall be the same as those of the other standing committees of the Board, except the Executive Committee; said committees retaining their respective powers and duties concerning Medical Center matters.

The committee shall report its findings and recommendations to the Board of Trustees or the Executive Committee.

#### **Article XII. Officers of the University**

1. The Officers of the University shall be a President, a Chancellor, a Provost, a Vice President for Business and Finance, a Vice President for Health Affairs, one or more other Vice Presidents, a Treasurer, a Secretary, a University Counsel, and such other officers as the Board of Trustees may elect. One person may hold more than one office, except that the offices of President and Secretary may not be held by the same person.

2. These officers shall be elected by the Board of Trustees at its annual meeting for a term of one year and shall serve until their successors are elected and have taken office.

3. A vacancy in any office of the University may be filled, for the unexpired term, by the Board of Trustees or by the Executive Committee.

#### **Article XIII. President**

1. The President shall be the chief educational and administrative officer of the University. He shall be responsible to the Board of Trustees for the supervision, management, and government of the University, and for interpreting, and carrying out the policies of the Board of Trustees. He shall have the powers and duties set forth in the Charter and in these Bylaws, and such other powers and duties as the Board of Trustees shall delegate to him.



2. He, or someone designated by him, shall preside at all academic functions and represent the University before the public.

3. He shall preside at all meetings of the University Faculty. He may veto any action taken by the University Faculty or any action taken by the faculty of any college or school in the University and state his reasons for such action.

4. He shall submit a proposed annual budget for the University to the Executive Committee prior to the beginning of the fiscal year covered by the budget.

5. He shall submit to the Board of Trustees an annual report on the condition, operations, and needs of the University.

6. He shall recommend to the Board of Trustees persons to be officers of the University other than the President.

#### **Article XIV. Chancellor**

1. The Chancellor, under the President, shall exercise the powers and duties of the President as delegated by the President from time to time.

2. He shall assume the powers and duties of the President during the incapacity or absence of the President when specifically authorized by the President or the Board of Trustees, or in case of a vacancy in the Office of President.

#### **Article XV. Provost**

1. The Provost shall be an executive officer of the University, under the President, responsible for all educational affairs and activities, including research, and for all aspects of student activity and welfare. He shall have the powers and duties assigned to him by the President and shall report to the President.

2. He shall be a member of the faculty of each college and school, and ex officio a member of each committee (other than Committees of the Board of Trustees) or other body concerned with matters for which he is responsible.

3. He shall receive recommendations developed by the faculty and educational officers for consideration and recommendation to the President.

#### **Article XVI. Vice President for Business and Finance**

1. The Vice President for Business and Finance shall be an executive officer, under the President, responsible for all business and finance, including accounting and auditing, preparation of budgets, fiscal planning, and operating of services of the University. He shall have the power and duties assigned to him by the President and shall report to the President.

2. He shall have custody of all records, contracts, agreements, deeds, and other documents of the University or relating to its operations or properties, except minutes of meetings.

3. He shall submit to each regular meeting of the Executive Committee a report on those aspects of the finances of the University that the Executive Committee may require, and shall submit to the Board of Trustees at the end of each fiscal year an account of all receipts and disbursements for the preceding year and a statement in such details as the Board of Trustees may require of the financial condition of the University at the end of such year.

4. He and the personnel under him shall be bonded to the extent determined by the Executive Committee.

#### **Article XVII. Vice President for Health Affairs**

The Vice President for Health Affairs shall be an executive officer, under the President, responsible for the operation of the Medical Center. He shall have the

powers and duties assigned to him by the President and shall report to the President.

#### **Article XVIII. Treasurer**

1. The Treasurer shall report to the President or such officer of the University as the President may direct and shall have the powers and duties assigned to him by the President or such other officer.

2. He may receive and disburse investment funds and purchase, sell, or otherwise dispose of investment securities pursuant to the directions of the Executive Committee or Investment Committee, as the case may be.

3. He and the personnel under him shall be bonded to the extent determined by the Executive Committee.

#### **Article XIX. Secretary**

1. The Secretary, under the President, shall have all of the powers and duties set forth in these Bylaws and the powers and duties commonly incident to his office. He also shall have the powers and duties assigned to him by the President and shall report to the President.

2. He shall be the custodian of the seal of the corporation and shall affix and attest to same on all duly authorized contracts, deeds and other documents.

3. He shall maintain an official roster setting forth the status of all persons employed by the University.

#### **Article XX. University Counsel**

The University Counsel shall be the legal adviser to the University and shall be responsible for all matters of a legal nature concerning the University, including litigation, preparation or approval of all contracts, deeds, conveyances, or other documents.

#### **Article XXI. Faculty**

1. The University Faculty shall be composed of the President, the Chancellor, the Provost, the Vice Presidents, the Secretary (who shall also be the Secretary of the Faculty), all deans, professors, associate professors, and assistant professors, and all other full-time members of the instructional staff who are not candidates for degrees at Duke University, Registrar, and the University Librarian, and such other persons as may be designated by the President and approved by the Executive Committee or the Board of Trustees.

2. The University Faculty shall be responsible for the conduct of instruction and research in the various colleges and schools in the University. It may also consider and make recommendations to the President regarding any and all phases of education at the University.

3. The University Faculty shall approve and recommend to the Board of Trustees the persons it deems fit to receive degrees or other marks of distinction, and the establishment of any new degree or diploma.

4. The University Faculty may organize and exercise its functions through appropriate councils, committees, or other bodies.

5. Each college and school in the University may have a faculty of its own, which shall be composed of the President, the Chancellor, the Provost, the Secretary, and all members of the University Faculty in the particular college or school. Each such faculty shall function under the President and other officers of educational administration and subject to the regulations of the University Faculty.

## **Article XXII. Appointments, Promotions and Tenure**

1. Members of the University Faculty shall be elected, appointed, or promoted by the Board of Trustees or the Executive Committee upon the recommendation of the Provost, with the approval of the President.

2. Except for positions designated as "medical research," "adjunct," or "clinical," members of the University Faculty, above the rank of instructors (associates in the Medical School), shall have tenure after seven years of continuous service at the University, or such shorter period as may be determined for individual cases by the Board of Trustees or the Executive Committee.

## **Article XXIII. Sabbatical Leaves**

1. Each member of the University Faculty of the rank of professor, associate professor, or assistant professor shall be eligible for sabbatical leave after each six years of service to the University. Such leave may be taken for a full year at half salary or a half year at full salary.

2. Sabbatical leave may be granted by the Executive Committee upon the written recommendation of the dean of the appropriate college or school, approved by the Provost and the President.

## **Article XXIV. Retirement**

1. All members of the faculty of the University who are eligible for or participate in the TIAA Plan and who would attain the age of seventy years prior to March 1 of a given academic year shall retire at the end of the preceding academic year and all such members of the faculty who attain the age of seventy years on or after March 1 in a given academic year shall retire at the end of such academic year.

2. The retirement and annuity plan adopted by the University on October 1, 1925, is hereby amended in those respects required to conform with the provisions of the Bylaws.

## **Article XXV. Student Body**

1. The student body of Duke University shall be composed of all full-time and part-time students regularly enrolled in the University.

2. The student body may consider and make recommendations to the President regarding any and all phases of education and student life at the University.

3. The student body may organize and conduct its affairs under elected representative government or governments and through appropriate councils, committees, or other bodies.

## **Article XXVI. The University Libraries**

1. The University Libraries are composed of (1) the William R. Perkins Library and its branches, (2) the School of Law Library, and (3) the Medical Center Library and its branches.

2. The University Libraries shall be responsible for such development and dissemination of scholarly and informational resources required by the academic community for instruction, research, study and publication, as designated by the Provost.

3. Professional librarians of the University Libraries shall be composed of the University Librarian, the Librarian of the School of Law, the Director of the Medical Center Library and other such persons as may be designated by the Provost with the approval of the President. The professional librarians shall be appointed or promoted by the Provost, with approval of the President, after the

Provost has received recommendations from the University Librarian, the Librarian of the School of Law through the Dean of the School of Law, or from the Director of the Medical Center Library through the Vice President for Health Affairs.

4. The professional librarians of the University Libraries may organize and exercise their functions through appropriate councils, committees, or other bodies.

5. The University Libraries shall function under the President and other officers of educational administration, and subject to the regulations of the professional librarians of the University Libraries, as approved by the Provost.

## **Article XXVII. Fiscal Year, Academic Year and Academic Calendar**

1. The fiscal year of the University shall commence on July 1 and end on the following June 30.

2. The academic year of the University shall commence on September 1 and end on the following August 31.

3. The President shall establish the academic calendar for each academic year, and designate the day on which the graduation exercises shall take place.

## **Article XXVIII. Amendment of Bylaws**

These Bylaws may be amended at any regular meeting of the Board of Trustees by the affirmative vote of two-thirds of the then membership of the Board, provided that the proposed amendment is mailed by the secretary of the Board to each member at least twenty days before the meeting.

# **Alumni Organizations**

All former students of Duke University who have earned degrees or who are otherwise qualified by meeting residence requirements are enrolled as members of the General Alumni Association when their classes are graduated.

The purposes of the General Alumni Association, to quote from its constitution, are “. . . to unite its members in good fellowship and in cooperative enterprise with the faculties, students, officers, and trustees of Duke University, toward the fulfillment of the University’s educational and humanitarian purposes; to aid in providing for the University an atmosphere in which scholarship and learning might flourish and in which the continuing search for truth and enlightenment might proceed unhindered; and in all appropriate ways to assist and stimulate Duke University toward significant achievement and influence.” The General Alumni Association meets annually, usually in May or June.

Individual sub-associations have been organized by the alumni of the Schools of Divinity, Engineering, Forestry, Law, Medicine, and Nursing. Each graduated class also exists as a permanent organization, with members holding reunions at intervals of five years. Local alumni associations are established in approximately 100 areas where alumni live in concentrated numbers, and these associations usually meet at least once a year.

The Duke University National Council is the executive council of the General Alumni Association and determines the broad policies and patterns for all alumni organizations. Its membership consists of representatives from each of the organizations and also from each of the University’s faculties and student bodies. The National Council meets twice each year, on the Saturday closest to Founders’ Day, December 11, and during Alumni Weekend in May or June. In the interim between meetings its business is handled by an executive committee.

The Department of Alumni Affairs is the University’s administrative and coordinating agency for all alumni organizations and programs except those that involve a continuing financial support effort. Alumni fund raising programs are



administered by the Office of Development. The Department of Alumni Affairs is located in the Alumni House at 614 Chapel Drive and includes the Alumni Records Office.

The graduates of the University elect twelve of the thirty-six members of the University's Board of Trustees, with four being elected in alternate years for six year terms.

## Gifts and Bequests

Duke University is a privately established institution which derives its principal support from endowment funds and from gifts and grants, thus enabling it to offer both academic and professional training to its students at a fraction of the actual cost. Gifts and grants for both operational and capital development purposes presently account for approximately one-half of the University's annual income. They are essential to the quality of its educational services and to its progress as a center of learning and research.

Gifts to Duke University, of course, fully qualify as tax deductible contributions.

The University welcomes gifts, immediate or deferred, when made without restriction as to use or when designated for any of a broad variety of purposes. Gifts may be of cash, securities, or any kind of real or personal property, depending upon the wishes and the conveniences of the donor, and University officers are prepared to confer at any time to make sure that both the donor's wishes and possible tax advantages are fully realized.

A number of publications, designed to assist the donor in making a gift, are available, and requests for these or other information will be promptly acknowledged. Such requests should be addressed to the Duke University Development Office, Duke Station, Durham, N.C. 27706.

Deferred gifts may be made through bequests or through insurance, as well as through a variety of trust arrangements. Such gifts may become significant factors in estate planning, and while qualified counseling is essential in most instances, some sample bequest forms may be noted.

### GENERAL

I give (devise; if real property) and bequeath to Duke University, a corporation existing under the laws of the State of North Carolina and located in the City and County of Durham, State of North Carolina, and its successors forever, the sum of ..... dollars (or otherwise describe the gift) for the general purposes and uses of the University at the discretion of the Board of Trustees.

### SPECIFIC

I give (devise; if real property) and bequeath to Duke University, a corporation existing under the laws of the State of North Carolina and located in the City and County of Durham, State of North Carolina, or its successors forever, the sum of ..... dollars (or otherwise describe the gift) and direct that the income therefrom shall be used for the following purposes, viz. (here describe the use desired).

### CODICIL

Having hereinbefore made my last Will and Testament dated ....., and being of sound mind, I hereby make, publish, and declare the following codicil thereto: (here insert clause in same form as if it had been included in body of Will).

Except as herein before changed, I hereby ratify, confirm, and republish my said last Will and Testament.

## Office of University Relations

The Office of University Relations is the official news agency of the University, and all University news, except sports, emanates from this office. The Office maintains the University's relationship with the press, radio and television, and other communications media, and interprets the University—its faculty, its research, and its academic achievements—to the public via these media.

The Office also maintains individual biographical files on all faculty members, students, and staff, as well as files on all University departments and activities. Its files of clippings form a rich source of historical information of the Institution's life. In addition, the Office is a source of information for the many inquiries about Duke University which are received daily from all sections of the nation and from abroad.









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Duke University  
1979  
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*Medical Center*



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# School of Medicine Calendar 1979-1980

## First Year (Freshmen) Students

### 1979

August	
17	Friday—Fees and tuition payable
17	Friday, 8:30 A.M.—Orientation
20	Monday, 8:10 A.M.—First day of academic year, 1979-1980, begin fall semester
September	
3	Monday—Labor Day holiday
October	
19	Friday—Fees and tuition payable
November	
21	Wednesday, 6:00 P.M.—Begin Thanksgiving holiday
26	Monday, 8:10 A.M.—Classes resume
December	
18	Tuesday, 6:00 P.M.—End fall semester, begin Christmas holiday

### 1980

January	
11	Friday—Fees and tuition payable
14	Monday, 8:10 A.M.—Begin spring semester
March	
5	Wednesday—Registration for Summer Term II, 1980, and terms 1, 2, 3, and 4, Summer Term I, 1980-1981
March	
7	Friday—Fees and tuition payable
8	Saturday, 1:00 P.M.—Begin spring vacation
17	Monday, 8:10 A.M.—Classes resume
June	
28	Saturday, 6:00 P.M.—End spring semester

## Second Year (Sophomore),\* Third Year (Junior),† and Fourth Year (Senior)† Students

### 1979

March	
2	Friday—Fees and tuition payable
3	Saturday, 12:00 noon—End term 3, 1978-1979, begin spring vacation
12	Monday, 8:00 A.M.—Classes resume, begin term 4, 1978-1979
12-14	Monday-Wednesday—Registration for Summer Terms I and II, 1979, and terms 1, 2, 3, and 4, 1979-1980
May	
4	Friday—Fees and tuition payable
5	Saturday, 12:00 noon—End term 4, 1978-1979
5-6	Saturday-Sunday—Graduation activities
7	Monday, 8:00 A.M.—Begin Summer Term I, 1979
June	
29	Friday—Fees and tuition payable
30	Saturday, 12:00 noon—End Summer Term I, 1979
July	
2	Monday, 8:00 A.M.—Begin Summer Term II, 1979
4	Wednesday—Independence Day holiday

\*Five terms of eight weeks duration

†Four terms of eight weeks duration

<b>August</b>	
24	Friday—Fees and tuition payable
25	Saturday, 12:00 noon—End Summer Term II, 1979
27	Monday, 8:00 A.M.—First day of academic year 1979–1980, begin term 1, 1979–1980
<b>September</b>	
3	Monday—Labor Day holiday
<b>October</b>	
19	Friday—Fees and tuition payable
20	Saturday, 12:00 noon—End term 1, 1979–1980
22	Monday, 8:00 A.M.—Begin term 2, 1979–1980
<b>November</b>	
21	Wednesday, 6:00 P.M.—Begin Thanksgiving holiday
26	Monday, 8:00 A.M.—Classes resume
<b>December</b>	
15	Saturday, 12:00 noon—End term 2, 1979–1980, begin Christmas holiday

## 1980

<b>January</b>	
11	Friday—Fees and tuition payable
14	Monday, 8:00 A.M.—Classes resume, begin term 3, 1979–1980
<b>March</b>	
7	Friday—Fees and tuition payable
8	Saturday, 12:00 noon—End term 3, 1979–1980, begin spring vacation
17	Monday, 8:00 A.M.—Classes resume, begin term 4, 1979–1980
17–19	Monday–Wednesday—Registration for Summer Terms I and II, 1980, and terms 1, 2, 3, and 4, 1980–1981
<b>May</b>	
10	Saturday, 12:00 noon—End term 4, 1979–1980
10–11	Saturday–Sunday—Graduation activities





# University Administration

## General Administration

Terry Sanford, J.D., LL.D., D.H., L.H.D., D.P.A. *President*  
A. Kenneth Pye, LL.M., *Chancellor*  
William Bevan, Ph.D., *Provost*  
Charles B. Huestis, *Vice-President for Business and Finance*  
William G. Anlyan, M.D., D.Sc., *Vice-President for Health Affairs*  
J. David Ross, J.D., *Vice-President for Institutional Advancement*  
Eugene J. McDonald, LL.M. *Vice-President for Government Relations and University Counsel*  
Stephen Cannada Harward, A.B., C.P.A., *Treasurer and Assistant Secretary*  
J. Peyton Fuller, A.B., *Assistant Vice-President and Corporate Controller*  
Rufus H. Powell, LL.B., *Secretary of the University*  
Harold W. Lewis, Ph.D., *Vice-Provost and Dean of the Faculty*  
John C. McKinney, Ph.D., *Vice-Provost and Dean of the Graduate School*  
John M. Fein, Ph.D., *Vice-Provost and Dean of Trinity College of Arts and Sciences*  
Ewald W. Busse, M.D., *Associate Provost and Dean of Medical and Allied Health Education*  
Roscoe R. Robinson, M.D., *Associate Vice-President for Health Affairs and Chief Executive Officer of Duke Hospital*  
Frederick C. Joerg, M.B.A., *Assistant Provost for Academic Administration*  
Anne Flowers, Ed.D., *Assistant Provost for Educational Program Development*  
William J. Griffith, A.B., *Assistant Provost and Dean of Student Affairs*  
Clark R. Cahow, Ph.D., *Assistant Provost and University Registrar*  
Caroline L. Lattimore, Ph.D., *Assistant Provost and Dean of Minority Affairs*  
Richard L. Wells, Ph.D., *Assistant Provost and Associate Dean of Trinity College of Arts and Sciences*  
Joel L. Fleishman, LL.M., *Vice-Chancellor for Public Policy Education and Research; Director of the Institute for Policy Sciences and Public Affairs*  
Mel Ray, M.B.A., *Vice-President for Computer Processing*  
Connie R. Dunlap, A.M.L.S., *University Librarian*  
William E. King, Ph.D., *University Archivist*  
Robert N. Sawyer, Ed.D., *University Educational Planning Officer and Director of Summer Educational Programs*

## Medical Center Administration

### Office of Vice-President for Health Affairs

William G. Anlyan, M.D., *Vice-President for Health Affairs*  
Jane G. Elchlepp, M.D., Ph.D., *Assistant Vice-President for Health Affairs, Planning and Analysis*  
John D. Shytle, M.S., *Assistant Vice-President for Health Affairs, Administration*  
Robert G. Winfree, M.A., *Deputy Assistant Vice-President for Health Affairs, Planning and Analysis*  
Louis E. Swanson, M.H.A., *Director of Program Planning*  
L. T. Matthews, B.A., *Director of Engineering and Operations*  
James L. Bennett, Jr., A.B., *Executive Assistant to the Vice-President for Health Affairs*  
Bernard McGinty, B.A., *Director of Budget and Finance*  
Raymond C. Waters, M.A., *Assistant to the Vice-President*  
Iris L. Hildebran, *Director, Office of Grants and Contracts, Special Events*  
Barbara Echols, M.B.A., *Coordinator, Special and Regulatory Programs*  
Patricia H. Wagner, A.B., J.D., *Associate University Counsel, Health Affairs*

### Office of Medical and Allied Health Education

Ewald W. Busse, M.D., *Associate Provost and Dean, Medical and Allied Health Education*  
Arthur C. Christakos, M.D., *Associate Dean, Graduate Medical Education*  
Thomas T. Thompson, M.D., *Associate Dean, Allied Health Education and Administration*  
Suydam Osterhout, M.D., Ph.D., *Associate Dean, Admissions*  
M. Henderson Rourk, Jr., M.D., *Director, Continuing Medical Education*  
John L. Weinerth, M.D., *Director, Graduate Medical Education*  
Shirley K. Osterhout, M.D., *Assistant Dean for Student Affairs*  
Charles B. Johnson, Ed.D., *Associate University Registrar and Registrar, Medical Center*  
Ann M. Rimmer, *Administrative Assistant to the Dean of Medical and Allied Health Education*  
Thomas E. Frothingham, M.D., *Director, Area Health Education*

### Office of Duke University Hospitals

Roscoe R. Robinson, M.D., *Associate Vice-President and Chief Executive Officer*  
Richard H. Peck, M.H.A., *Administrative Director, Duke Hospital*



Delford L. Stickel, M.D., *Associate Director (Medical)*  
 Wilma A. Minniear, R.N., M.S.N., *Director of Nursing Services*  
 Wallace E. Jarboe, *Director, Logistics and Management—Duke North*  
 J. Peyton Fuller, A.B., *Associate Director and Corporate Controller*  
 Richard L. Jackson, M.A., *Director of Personnel*  
 Robert D. Metcalf, M.H.A., *Assistant Administrative Director*  
 Carmen J. Rodio, B.A., *Assistant Administrative Director*  
 Michael J. Schwartz, M.H.A., *Assistant Administrative Director*  
 Kenneth E. Wheeler, M.H.A., *Assistant Administrative Director*

## Office of the School of Nursing

Ruby L. Wilson, R.N., Ed.D., *Dean*  
 Eleanor C. Bradsher, *Administrative Assistant to the Dean*  
 Edward E. Cooke, B.A., *Professional Assistant to the Dean*  
 Dorothy Brundage, R.N., M.N., *Acting Director of Academic Programs*  
 Joy Claussen, R.N., Ph.D., *Coordinator of Outreach Programs*  
 Ella E. Shore, M.R.E., M.A., *Dean of Student Affairs*

# **Standing Committees of the School of Medicine and Medical Center**

## **Admissions—Allied Health Degree**

Thomas T. Thompson, M.D., *Chairman*; Drs. Duke, Hamilton, C. Johnson, Neelon, and Widmann

## **Admissions—Allied Health Certificate**

Thomas T. Thompson, M.D., *Chairman*; Drs. C. Johnson, Logue, Moylan, Rice

## **Admissions—Medical School**

Suydam Osterhout, M.D., Ph.D., *Chairman*; Drs. Andersen, N.C. Anderson, W.B. Anderson, Coonrad, Dawson, Gianturco, C. Johnson, R. S. Jones, Kamin, Morris, O'Quinn, Parkerson, Paulson, Steege, Vogel, Widmann, and Worde; Ms. King, *Administrative Assistant*; student representatives, Ms. Hall; Messrs. Bennett and White

## **Allied Health Education Advisory Committee**

Thomas T. Thompson, M.D., *Chairman*; Drs. Busse, Estes, Green, Harmel, Jennings, C. Johnson, Joklik, Robertson, Rosse, Sabiston, and Wilson

## **Allied Health Program Directors**

Thomas T. Thompson, M.D., *Chairman*; Drs. Goodrich, Hamilton, Jaeger, W. Johnston, Kunze, Pratt, Shows, Widmann, Wilson; Messrs. Bartlett, Delaney, Detwiler, Skolaut, Stump

## **Animal Care Advisory**

Joseph L. Wagner, D.V.M., *Chairman*; Drs. Bigner, Currie, Dennis, Ellinwood, Gooding, K. Hall, Wm. Hall, Lynn, Mendell, Oldham, Slotkin, Tyrey, and Wolbarsht

## **Audit and Tissue**

Clinical Chairman of each clinical service and head of each division in service

## **Awards Committee for Student Awards**

Shirley Osterhout, M.D., *Chairman*; departmental professional advisers from basic and clinical departments

## **Brain Death**

William P. Wilson, M.D., *Chairman*; Drs. Cooke, Erwin, Green, Kramer, Oaks, Olanow, Roses, Rothman, and Wilkins

## **Clinical Cancer Education Program**

W. W. Shingleton, M.D., *Chairman and Director*; Drs. Faletta, Grufferman, McGarth, Metzgar, Michalopoulos, J. Moore, Seigler, Surwit; Ms. McIntire

## **Clinical Investigations**

Jerome S. Harris, M.D., *Chairman*; Ms. Barbara E. Echols, *Co-Chairperson*; Drs. Foulks, Fox, Gallagher, Guttman, Klintworth, Most, Pupkin, Semans, Stargel, Taska, Workman; Chaplain Aitken; Ms. Hildebran, Patterson, Wagner; Messrs. Coffey and McAllister

## **Continuing Education**

M. Henderson Rourk, M.D., *Chairman*; Drs. Crenshaw, Clapp, Frothingham, McLelland, Oldham, Parker, and Parkerson; Ms. Dell; Mr. Agnello

## **Davison Scholarship**

Arthur C. Christakos, M.D., *Chairman*; Drs. R. S. Jones and Shirley Osterhout

## **Duke Comprehensive Cancer Center Advisory**

W. W. Shingleton, M.D., *Chairman*; Drs. Amos, Anylan, Busse, Elchlepp, Estes, Hill, Jennings, Joklik, Johnson, Katz, Kirschner, Laszlo, Parker, Putman, Robertson, Robinson, Rundles, Sabiston, Wilson, and Wyngaarden

## **Duke-Veterans Administration Anatomical Gifts**

Delford Stickel, M.D. *Chairman*; Drs. Adams, Chandler, MaHaley, and Pratt; Messrs. Puckett and Wheeler

## **Emergency Department Advisory**

Joseph A. Moylan, Jr., M.D., *Chairman*; Drs. English, Hawkins, Hindman, Ruderman, Sydnor, and Wilson; Ms. Ford and Wildberger; Messrs. Daniel, Herndon, and Wheeler; Lt. Washington

## **Financial Aid**

Ms. Nell Andrews, *Coordinator*; Drs. Christakos, Johnston, Suydam Osterhout, and Thompson; Ms. King; Mr. McGinty; student representatives, Mr. Buckner, Ms. Markert

## **Hospital Advisory**

Roscoe Robinson, M.D., *Chairman*; Drs. Anylan, Brodie, Busse, Estes, Harmel, Jennings, Katz, Machemer, Parker, Putman, Sabiston, and Wyngaarden; Ms. Minniear; Messrs. Peck, Summers, and Wheeler

## **Hospital Infections**

Suydam Osterhout, M.D., Ph.D., *Chairman*; Drs. Durack, Filston, Gallis, Hamilton, Hansen, Klein, Lang, Peete, Weinerth, and Wilfert; Ms. Burke, Moggio, Palmer, and Robbins, Messrs. Metcalf and Skolaut

## **Medical Center Radiation Control and Radioactive Drug Research Committee**

Henry Kamin, Ph.D., *Chairman*; Drs. Briner, Goodrich, Harris, Sanders, Tyor, and Wolbarsht; Messrs. Knight and Schwartz

## **Medical Center Safety**

Robert D. Metcalf, M.H.A., *Chairman*; Dr. Davis, Messrs. Benbow, Bird, Cole, Dennis, Fowler, Gebhardt, Hansen, Haith, Knight, Kozoman, Mountford, Stevenson, and Wildermann; Ms. Higgins, Watkins

## **Medical Education Policy Advisory**

Ewald W. Busse M.D., *Chairman*; Drs. Brodie, Christakos, Fuchs, Gianturco, Greene, C. Johnson, T. Johnson, Joklik, Menzel, Weinerth, Wyngaarden; Mr. Bird; Ms. Hicks and Lee; student representatives, Messrs. Barnes, Gillogly, and Rutledge; Ms. Bull and Spivey

## **Medical Records**

George J. Ellis III, *Chairman*; Drs. Brazy, Grufferman, Jelovsek, Stickel, and Wang; Ms. Angle, Borden, and Hall; Messrs. Kulik, Metcalf, and Roebuck

## **Medical School Advisory**

William G. Anylan, M.D., *Chairman*; Drs. Brodie, Busse, Estes, Harmel, Hill, Jennings, T. Johnson, Joklik, Katz, Kirshner, Machemer, Parker, Putman, Robertson, Robinson, Sabiston, and Wyngaarden; Mr. Bennett

## **North Carolina Residence**

Suydam Osterhout, M.D., Ph.D., *Chairman*; Drs. Clapp, C. Johnson, and Peete

## **Operating Room Advisory**

David Sabiston, M.D., *Chairman*; Drs. Creasman, Filston, Georgiade, Goldner, Harmel, Parker, and Vartanian; Ms. Flemming and Owins; Messrs. Brandon, Stump, and Wheeler



## Outpatient Advisory

Arthur Chandler, M.D., *Chairman*; Drs. Baylin, Feldman, Graham, Habig, Hammond, Howell, and Oldham

## Research Award

F. Stephen Vogel, M.D. *Chairman*; Drs. Metzgar, Schanberg, and Semans

## Utilization Review

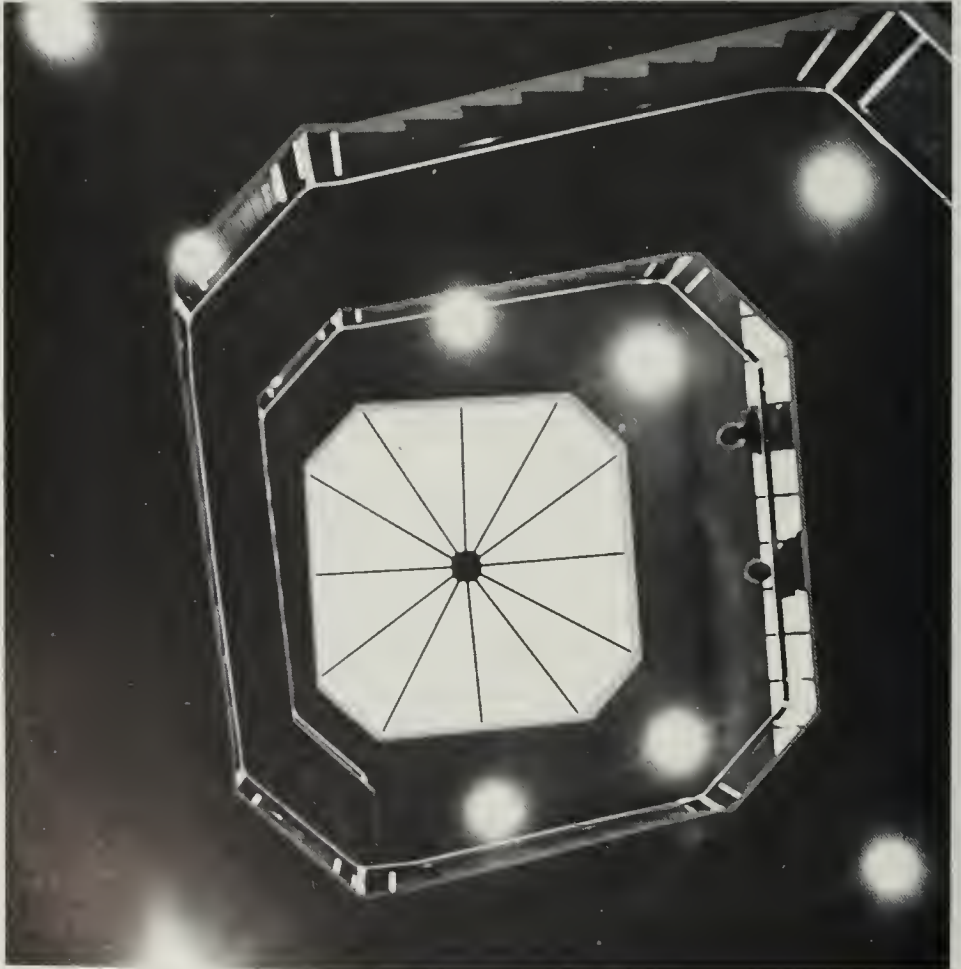
William J. Murray, M.D., *Chairman*; Drs. Arena, Graham, Kim, Parker, Portwood, Shield, Wilkinson, Wilson, and Young; Ms. Borden, Corio, Fowler, Johnson, Loftin, Rice, Rolland, Pate, and Wicker; Mr. Metcalf

## Veterans Administration Research and Development

Raymond Postlethwait, Jr., M.D., *Chairman*; Drs. Cavenar, Cohen, Green, Greene, Greenfield, Jones, Sommer, Thompson, and Weitzner; Ms. O'Toole; Mr. McCraw

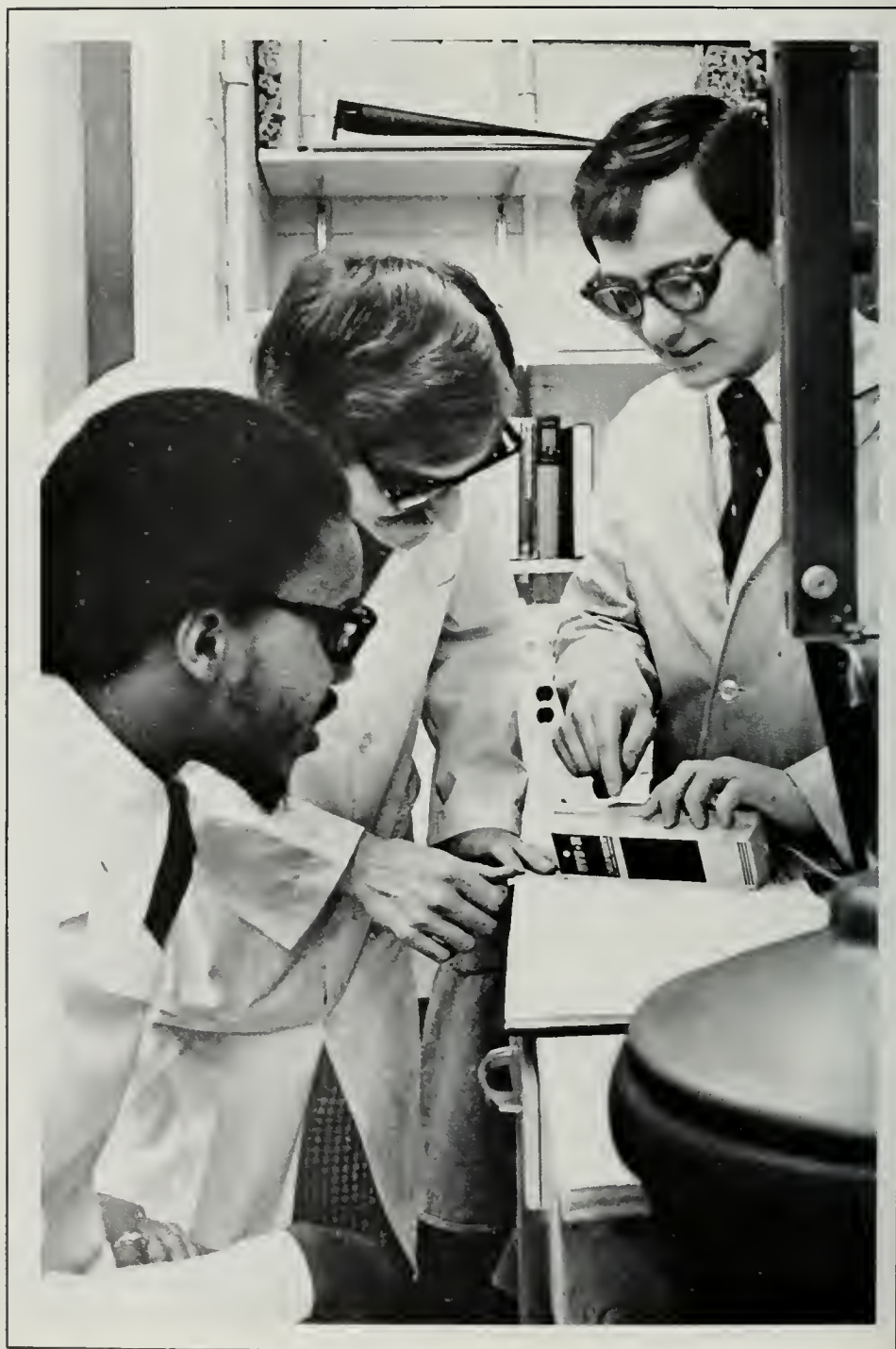
## Vice-President's Veterans Administration

William G. Anlyan, M.D., *Chairman*; Richard S. Kramer, M.D., *Vice-Chairman*; Drs. Brodie, Busse, Estes, Green, Harmel, Hill, Pratt, Putman, Sabiston, Wadsworth, Wilson, and Wyngaarden; Messrs. Arledge and Shytile





# General Information



## History

In 1924 James Buchanan Duke established The Duke Endowment and thus made possible the creation of Duke University.

"I have selected Duke University as one of the principal objects of this trust because I recognize that education, when conducted along sane and practical, as opposed to dogmatic and theoretical, lines is, next to religion, the greatest civilizing influence.

I have selected hospitals as another of the principal objects of this trust because I recognize that they have become indispensable institutions, not only by way of ministering to the comfort of the sick, but in increasing the efficiency of mankind and prolonging human life . . . I very much hope that the people will see to it that adequate and convenient hospitals are assured in their respective communities . . . It is to these rural districts that we are to look in large measure for the bone and sinew of our country."

In item VIII of his will, Mr. Duke bequeathed to The Duke Endowment ten million dollars for Duke University, of which four million dollars was to be expended for a medical school, hospital, and nurses' home at Duke University.

Wards and clinics in the hospital were named for eminent physicians and surgeons in order to remind the staff and students of what has been accomplished in medicine, as well as to follow Mr. Duke's Indenture; "I advise courses in history, especially the lives of the great of the earth."

The School of Medicine and Duke Hospital (consisting of 400 beds) were opened in 1930 under the leadership of the first dean, Dr. Wilburt C. Davison, who had recruited an outstanding faculty on a geographic full-time basis. During that same year, the first class of medical students, hospital administration students, and dietetic students were admitted. The Private Diagnostic Clinic was organized in 1932 to provide coordinated medical and surgical care for private patients with moderate incomes.

Over the years the Medical Center has been enlarged and its programs expanded by new construction and by the acquisition of, and affiliation with, established hospitals.

Currently the Medical Center at Duke University occupies approximately 120 acres. The southern portion is contiguous with the main quadrangle of the University and consists of the following: *Davison Building*—Department of Pathology, Central Teaching Facility, Division of Audiovisual Education, Medical Center Administration, Student Lounge, Office of Admissions. *Duke Hospital South*—Departments of Medicine, Pediatrics, and Surgery, and Amphitheater, Chapel, Private Diagnostic Clinics, Outpatient Clinics, Inpatient Care Units and support services; *Baker House*—offices of Nursing, Medicine, Surgery, Pediatrics, Obstetrics-





Gynecology, and Pastoral Care and Counseling; *Barnes Woodhall Building*—Hospital Administration, offices and laboratories of Obstetrics-Gynecology and Pediatrics, delivery rooms, and the Emergency Service; *Diagnostic and Treatment Building*—offices and clinics of Medicine, Surgery, Pediatrics, and Psychiatry; *Gerontology Building*—Center for Aging, Department of Psychiatry, offices and laboratories of Medicine, Pediatrics, and Surgery; *Clinical Research I*—offices and laboratories of Medicine and Surgery and research wards; *Clinical Research II*—Hyperbaric Unit, offices and laboratories of Medicine, Surgery, Pediatrics, and Psychiatry, and the Clinical Cancer Research Unit; *Edwin A. Morris Clinical Cancer Research Building*—Inpatient Care Unit, Outpatient Clinics, and Division of Radiation Therapy.

The northern portion has the following buildings: *Nanaline H. Duke Medical Sciences Building*—Departments of Biochemistry and Physiology-Pharmacology; *Alex Sands Medical Sciences Building*—Department of Anatomy and clinical science research programs of the Departments of Medicine, Surgery, Psychiatry, and Anesthesiology; *Edwin L. Jones Basic Cancer Research Building*—Director of Comprehensive Cancer Center, Department of Microbiology and Immunology and basic science research programs of Medicine, Surgery, Pediatrics, Obstetrics-Gynecology, Anatomy, and Pathology; *Medical Research Building*—offices and laboratories of Radiology; *Bell*

*Building*—offices and laboratories of Medicine, Surgery, Pediatrics, Radiology, Anatomy, and Ophthalmology. It also houses Information Services, gross anatomy laboratories, and the Research Training Program; *Seeley G. Mudd Communications Center and Library*—Medical Center Library, the Trent Collection of the History of Medicine; *Searle Center for Continuing Education*; *Eye Center*—patient-care activities of the Department of Ophthalmology as well as their offices and laboratories; *Duke Hospital North*—under construction and scheduled for completion in 1979.

In the western section of the campus are: *Research Park Buildings I, II, III, and IV*—offices and laboratories of Medicine, Surgery, Pediatrics, Radiology and Microbiology and Immunology; *Vivarium*—Division of Laboratory Animal Resources and laboratory animal care facilities; *Animal and Laboratory Isolation Facility*—special containment facility for cancer research.

In the eastern section of the campus are: *Pickens Rehabilitation Center*—General and Rehabilitation Outpatient Clinics; Student Health Service, Employee Health Service, and Faculty Family Health Service; *Civitan Mental Retardation and Child Development Center*—offices, clinics, and laboratories of Psychiatry and Pediatrics; *Trent Drive Hall*—Health Administration and Department of Community and Family Medicine.

Duke University Medical Center continues to strive to be a leader in contemporary medicine. This involves maintaining superiority in its four primary functions—unexcelled patient care, dedication to educational programs, national and international distinction in the quality of research, and service to the region.

Growth is identified with deeper involvement in the social aspects of health, the establishment of many advanced therapeutic and research facilities, a building program that will require one or more decades for its completion and a new and imaginative revision of the medical teaching program that has attracted the attention of educators around the world.

## Resources for Study

**Library/Communications Center.** The Medical Center Library/Communications Center is located in the Seeley G. Mudd Building, midway between the north and south medical center campuses.

The Medical Center Library attempts to provide all informational services and collections necessary to further educational, research, and clinical activities in the medical field. The collection of approximately 160,000 volumes and 2,550 current journal subscriptions is freely available for use by Medical Center students and personnel; study accommodations for 500 readers includes extensive provisions for audiovisual learning. The library also includes the Trent Collection which is unsurpassed in the southeast as a resource for study of the history of medicine, and a branch collection of books and journals maintained in the Nanaline B. Duke Medical Sciences Building.

The Medical Center Library is open: Monday-Friday, 8:30 A.M.-midnight; Saturday, 8:30 A.M.-9:00 P.M.; Sunday, 12:00 noon-11:00 P.M. Summer and holiday hours are as announced.

Director: Warren P. Bird, M.S. (Columbia, 1964), *Associate Professor of Medical Literature*; Curator of the Trent Collection: G.S.T. Cavanagh, B.S., B.L.S. (McGill, 1951), *Professor of Medical Literature*.

The Medical Center Bookstore offers a wide selection of biomedical textbooks and reference books, as well as an assortment of laboratory and clinical instruments and office supplies. Facilities for browsing in a pleasant atmosphere are available, as are special individualized services. The Bookstore is open: 8:30 A.M.-5:00 P.M., Monday-Friday.

Manager: Ansel M. Peak, B.A.

The Searle Center for Continuing Education in the Health Sciences provides accommodations for conferences, symposia, lectures and meetings to support the Continuing Education activities of the Medical Center. Provisions have been made for banquet and food service arrangements to complement the meeting facilities.

**The Thomas D. Kinney Central Teaching Laboratory.** The Thomas D. Kinney Central Teaching Laboratory, formerly the Central Teaching Facility, is located on the fourth floor of Davison Building where it provides laboratory, demonstration, and conference space for all courses taught in the basic sciences, with the exception of gross anatomy. A full-time staff maintains a wide range of equipment and provides supplies and services necessary for the teaching programs conducted in the facility, thus enabling the academic staff of each department to devote its efforts entirely toward the students.

Six unit laboratories, each accommodating twenty students, and a twelve man M.D.-Ph.D. candidate laboratory are devoted to instruction for the first year. All first year medical students are given space in one of these laboratories for their own work which they maintain for the entire academic year. Four small laboratories are interspersed between the six unit laboratories and provide space for large pieces of equipment used in conjunction with exercises conducted in the unit laboratories. Space is also provided for small laboratory projects. Three large multipurpose laboratories can accommodate forty or more students each for a large variety of teaching exercises. Other areas include demonstration and conference rooms and a microscopy laboratory for advanced courses offered during the third year.

In addition to providing services to the School of Medicine, the Central Teaching Facility provides resources for use throughout the year by allied health programs.

Acting Manager: Carol G. Reilly, B.S.

**Division of Audiovisual Education.** The Division of Audiovisual Education serves the Medical Center by providing all types of audiovisual materials





to assist the faculty. There are three subdivisions: the Medical Art Facility, the Medical Photography Facility, and the Central Television Facility.

The Medical Art Facility provides illustrations produced by various art methods and techniques. Services rendered are medical illustrations, schematic and mechanical drawings, diagrams, charts, graphs, designs, lettering, signs, casts, models, and exhibits, as well as other forms of illustrations.

The Medical Photography Facility is staffed and equipped to provide all photographs needed for the diagnosis and treatment of patients, for teaching, and for research. For example, photographers take pictures of patients, including such fine details as the patterns of vessels on the retinae or those of the skin as they are revealed through infrared light. Standard sized slides, transparencies, and prints are produced as requested.

The Central Television Facility also provides services for teaching, research, and patient-care programs. A two-channel television link (ITFS) has been established between the Central Television Facility and the Durham V.A. Hospital. This link makes possible transmissions of educational programs. Motion pictures in color and with sound are also produced by this section. Audiotape services, projectionists, and projectors are provided.

Although no formal study programs in medical art, medical photography, and medical television are scheduled, individual training tailored to the needs of the students is available.

Director: Sam A. Agnello, A.B.

**Duke Hospital.** Duke Hospital, one of the largest private hospitals in the south, is part of the Medical Center and currently has 895 beds. The hospital directs its efforts toward the three goals of expert patient care, professional education, and service to the community. It offers patients modern comprehensive diagnostic and treatment facilities and special acute care and intensive nursing units for seriously ill patients. Ambulatory patients may be admitted to a minimal care unit. Surgical facilities include eighteen operating rooms in which surgeons perform more than 16,000 operative procedures annually. Approximately 1,800 babies are born each year in the delivery suite. Other special facilities for patients include a heart catheterization laboratory, hemodialysis unit, cancer research unit, pulmonary care unit, hyperbaric oxygenation chamber, and cardiac care unit.

The over 29,000 patients admitted annually have their choice of private, semi-private, or ward accommodations. Close working relationships with private and governmental health and welfare agencies provide opportunities for continued care of patients after they leave Duke Hospital.

Ambulatory services include the nonprivate outpatient clinics, private diagnostic clinics, the employee health service, and the emergency department, with annual total patient visits of over 400,000. The clinical faculty of the Duke University School of Medicine participate in undergraduate and graduate medical education and practice medicine in the hospital and in private diagnostic clinics.

Duke Hospital, with a house staff of approximately 579, is approved for internship and residency training by the Council on Medical Education and Hospitals of the American Medical Association and is fully accredited by the Joint Commission on Accreditation of Hospitals.

**Veterans Administration Medical Center.** The Durham Veterans Administration Medical Center, with 489 beds, annually admits over 7,000 patients. The hospital is within walking distance from the School of Medicine and has closely integrated teaching and training programs for medical students and house staff. These programs are provided by the full-time professional staff who are members of the faculty of Duke University School of Medicine.





**Highland Hospital.** Highland Hospital, in Asheville, North Carolina, is a 131-bed, private, nonprofit, psychiatric hospital. It was founded in 1904 by Dr. Robert S. Carroll, who donated the hospital in 1939 to the Duke University Medical Center. In July, 1967, Highland Hospital was fully integrated into the Duke University Medical Center as a division of the Department of Psychiatry.

All full-time psychiatrists, psychologists, and social workers at Highland Hospital hold academic appointments in the Department of Psychiatry of the Duke University Medical Center. The faculty at Highland Hospital is active in teaching psychiatry, psychology, and psychiatric social work to medical students, psychiatric residents, student psychologists, student social workers, and physician's associate students. Members of the faculty may also be involved in psychiatric and psychological research as well. These academic endeavors, and a striving for excellence that accompanies them, provide a stimulating atmosphere for the best possible patient care.

**Sea Level Hospital.** Sea Level Hospital in Carteret County, North Carolina, became part of Duke University Medical Center in 1969 as a result of a gift by D. E. Taylor and family of West Palm Beach, Florida. The seventy-two-bed community hospital retains its professional and administrative staff, with representatives of the Medical Center serving in an advisory capacity. It provides an opportunity for medical students to obtain experience in the practice of medicine in a small community.

**Lenox D. Baker North Carolina Crippled Children's Hospital.** The Lenox D. Baker North Carolina Cerebral Palsy Hospital, with forty beds, is a residential rehabilitation center for children with neuromuscular and skeletal diseases, primarily cerebral palsy. Although it is a state institution, physicians on the faculty of the Duke University Medical Center conduct interdepartmental teaching and training programs for house staff, medical students, and the Cerebral Palsy Hospital staff.

**Durham County General Hospital.** Durham County General Hospital is a county owned, 483-bed, general, short-term care community facility serving the residents of Durham County. This institution participates in many of the medical and health-related professional training experiences.

**Other Hospitals.** Various cooperative teaching and training programs are available for medical and allied health professional students and house staff at other hospitals including McPherson Hospital in Durham, Asheville Veterans Administration Hospital in Buncombe County, Murdoch Center for Retarded Children and John Umstead Hospital in Butner, Dorothea Dix Hospital in Raleigh, and Cabarrus Memorial Hospital in Concord, North Carolina.

### **Policy of Nondiscrimination**

Duke University does not discriminate on the basis of age, race, color, national and ethnic origin, sex, or handicap, in the administration of educational policies, admission policies, financial aid, employment, or any other University program or activity. It admits qualified students of any age, sex, race, color, national and ethnic origin to all the rights, privileges, programs, and activities generally accorded or made available to students.

# Program Information





## The Medical Curriculum

In recent years, analysis and appraisal of medical curricula have resulted in changes in many medical schools. Several factors have required these changes. Important among them are the increasing scope and complexity of medicine generally and the dissatisfaction with the sharp cleavage between basic science and clinical years. As a result of long study, the Duke University School of Medicine instituted a major revision of the curriculum, beginning with the class which entered in the fall of 1966.

The aims of the present curriculum are: (1) to provide a strong academic basis for a lifetime of growth within the profession of medicine, with the development of technical competence, proficiency, and the proper attitudes peculiar to the practice of medicine as well as an appreciation of the broader social and service responsibilities; (2) to establish for the first year a basic science program which will fulfill the purposes of the increasingly heterogeneous student body; (3) to offer both clinical and basic science education simultaneously; (4) to permit the student to explore personal intellectual preferences and capabilities; (5) to allow indepth study in selected areas, either clinical or basic science; (6) to provide greater freedom of course selection and thus to encourage earlier career decision; and (7) to achieve better integration of the medical school curriculum with residency training and the practice of medicine.

The curriculum, while offering a previously unattainable degree of flexibility to medical education and new opportunities for intellectual exploration, also makes heavy demands upon the student. It should be recognized that medical students at the Duke University School of Medicine are expected to maintain a consistent level of performance and to demonstrate qualities of initiative and dedication to their chosen profession. A scholarly attitude toward medicine that will continue throughout an entire career is an important objective of the Medical School. The foundations of this attitude to learning should accompany the student upon entering.

Students are expected to maintain at all times a professional attitude toward patients, to respect confidences, and to recognize that they are the recipients of privileged information only to be discussed within the context of scholarship and in circumstances that truly contribute to the educational process or to the care of the patient. This attitude involves consideration not only of speech and personal appearance but also of morality, honor, and integrity.



## Doctor of Medicine Degree

The degree of Doctor of Medicine is awarded, upon approval by the faculty of Duke University, to those students who have completed the curriculum of the School of Medicine and have demonstrated their fitness to practice medicine by adherence to a high standard of ethical behavior and morality. Only those who have paid or made satisfactory arrangements to pay all indebtedness to the University will be awarded their degrees. Students are required to pass Part I and Part II of the National Board Examinations prior to graduation. Part I is customarily taken in September following successful the completion of the first year, and Part II after the second year.

**Course Requirements—First Year.** The student will study the principles of all the basic science disciplines. Rather than mastering an encyclopedic array of facts, the purpose will be to acquire familiarity with the major principles of each subject. An introduction to clinical medicine will be presented by the clinical services. The year will be divided into two terms of instruction, of eighteen weeks and twenty-three weeks, as follows:

Semester 1	Credit
Gross Anatomy	3
Microanatomy	3
Neuroanatomy	2
Biochemistry	5
Physiology	5
Genetics	1
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Semester 2	Credit
Pathology	5
Microbiology	5
Introduction to Clinical Diagnosis: Laboratory, Physical, and Radiologic Diagnosis	5
Pharmacology	4
Human Behavior	2
Community Health Sciences	2
Immunology	1
	<hr/> 24

**Course Requirements—Second Year.** The second year will provide an exposure to clinical science disciplines, which permit students early in their careers to become participants in the care of patients. The acquired appreciation of the problems of the clinical areas and the opportunities to recognize the applications of the basic sciences should lead to a more meaningful selection of courses for the subsequent two years. The second year will be divided into five terms of eight weeks each—medicine, obstetrics, pediatrics, psychiatry, and surgery.

**Course Requirements—Third and Fourth Years.** These two years will be made up of elective courses, selected by the student within requisite limitations. Each student will choose professional advisers from the preclinical and clinical faculties to assist in formulating the program for the third and fourth years. Half of the time must be devoted to basic science and half to clinical science. Recipients of a Ph.D. degree in a basic science subject or completion of one of the special study programs may fulfill the requirements for basic science.

The elective courses of study offered are described under each department. The wide selection affords an opportunity for students to design programs to best satisfy their needs, with guidance from their advisers.



As an alternative after completion of the second year, the student may enroll as a Ph.D. candidate in one of the basic sciences, earning this degree in two or three years. Then, having completed three of the four years necessary for a Doctor of Medicine degree, the student may earn that degree by completing a fourth clinical year.

The third and fourth years will be divided into eight terms of eight weeks each. Certain courses as noted will be offered during two summer terms.

**Promotion.** The records of each student are reviewed periodically by promotion committees composed of the department chairmen. The Dean of Medical Education acts on the recommendations received from the promotion committees and may:

1. Promote students whose work is satisfactory;
2. Warn students whose work is less than satisfactory that they must improve their scholastic endeavor;
3. Place on probation students whose work is unsatisfactory;
4. Request the resignation of any student who is considered an unpromising candidate for the degree of Doctor of Medicine.

A student wishing to appeal a decision may do so to the Dean of Medical Education within two weeks of notification.

The Dean, with the advice of the Medical School Advisory Committee, reserves the right to require the withdrawal of any student at any time if, in the

opinion of the majority of committee members, the student should not continue in the Medical School.

## Combined Degree Programs

**Medical Scientist Training Program.** The Medical Scientist Training Program is designed for highly qualified students strongly motivated toward a career in medical sciences and academic medicine. It provides an opportunity to integrate graduate education in one of the sciences basic to medicine with the full clinical curriculum of the School of Medicine. The program requires, on the average, six to seven years of study and leads to both the M.D. and Ph.D. degrees. Although the special emphasis of this program is on basic medical science, the trainees, because of their education in clinical medicine, have a remarkable range of career opportunities open to them. Graduates of this program follow one of two broad paths. Some embark directly on careers in teaching and research in one of the basic medical sciences, while maintaining strong ties with clinical science as a result of their combined training. Others enter residency programs before pursuing investigative and teaching careers in clinical medicine, carrying with them strong academic backgrounds which allow them to conduct fundamental research with a foundation of superior training and experience in basic sciences.

*Eligibility.* Applicants must meet the admission requirements of both the Medical School as a candidate for the M.D. degree, and the Graduate School as a candidate for the Ph.D. degree. Most candidates apply for admission to the first year of the program, but applications are accepted from students who are in residence in the Medical School or Graduate School of Duke University. In addition to the minimum requirements for acceptance to the Medical School and the Graduate School, advanced course work in science and mathematics and prior research experience (or other evidence of research aptitude) will count heavily in the selection of candidates.

*Financial Support.* Students admitted to the first year of the program will receive a traineeship award, consisting of a stipend and full tuition allowance, provided by a National Research Service Award from the National Institutes of Health. Currently the annual stipend, defined by NIH policy, is \$3,900, and financial support from that award can be furnished for up to six years, assuming normal progress.

*The Training Program.* This program has been designed to offer trainees great latitude in the selection of course material. Basic requirements are two academic years composed of the first basic science year and the second clinical science year of the curriculum for medical students at Duke University. Following completion of the second year, the trainee enters the graduate program to complete the requirements for the Ph.D. degree. One more academic year of elective clinical study is necessary to complete the requirements for the M.D. degree. Both degrees are awarded at the completion of this sequence. Minor variations in this schedule can be arranged if this is advantageous to the student's education.

**Year 1—Core Basic Science Year.** This year consists of courses in anatomy, biochemistry, genetics, microbiology, pathology, pharmacology, and physiology. An introduction to clinical methods concludes the first year. Students in the Medical Scientists Training Program work together throughout the first year, during which time they are encouraged to select their fields of graduate study. In the summer between the first and second years, trainees normally will be expected to begin the second year clinical rotations.

**Year 2—Core Clinical Science Year.** This year encompasses a comprehensive approach to medicine oriented to the patient as a whole. The year provides fundamental training in clinical medicine, with emphasis on the relationships



between general biological processes, from conception through birth, development, and maturation to senescence and death, as well as individual clinical states. Special consideration is devoted to the pattern of developmental sequences and to the changes in that pattern determined by genetic composition and the particular environment in which the patient lives.

During the second year, the trainee is taught primarily by teacher-investigators from the clinical departments. The core clinical year is divided into five terms of eight weeks each, encompassing medicine, obstetrics, pediatrics, psychiatry, and surgery. These may be taken in any sequence.

Years 3, 4, 5, (6)—The Graduate Years. During the third, fourth, and fifth and, if necessary, sixth year of the program, the trainee pursues graduate study to satisfy the requirements for the Ph.D. degree. These requirements include: (1) completion of necessary course work, (2) adequate performance in the preliminary examination, (3) original research suitable for a dissertation, and (4) successful defense of the thesis in the final examination. Detailed description of the other general requirements for the Ph.D. degree are stated in the *Bulletin of the Graduate School*.

The graduate curriculum of each trainee is developed in consultation with the director of graduate studies of the department in which the trainee elects to study and requires the approval of the Medical Scientist Training Program Committee. Since most of the ordering ideas and experimental techniques of all the medical sciences derive from mathematics and the physical sciences, it is essential to ensure that all students in the program have an adequate foundation in these subjects. Because of the close working relationship and geographical proximity of the departments of medical and physical sciences at Duke, the setting is unusually favorable for the achievement of that goal.

Descriptions of the graduate courses in the Departments of Anatomy, Pathology, Microbiology, Biochemistry, Genetics, Physiology, Pharmacology, Biomedical Engineering, and Computer Science are listed in the *Bulletin of the*



*Graduate School.* Trainees are encouraged to select courses which relate to their developing individual interests rather than follow a prescribed curriculum applied to all students in a given discipline. Such range, flexibility, and freedom are the essence of graduate education. The original research and dissertation of each trainee is supervised by a faculty adviser chosen by the trainee in consultation with the director of graduate studies in appropriate department. The faculty adviser is the chairman of the trainee's supervisory committee, which consists of at least three members from the major department. This committee generally administers the preliminary examination before the student commences original research and the final examination after the student completes the dissertation.

**Final Year—An Elective Year in Clinical Science.** In this year, which is entered only after completion of all requirements for the Ph.D. degree, a faculty adviser from the clinical discipline in which the student is most interested is assigned. The student and the adviser construct an individualized curriculum, which often places major emphasis on one clinical area and minor emphasis on other fields. One aim is the integration of research interests and clinical experience in such a way that the student's research competence will be facilitated; therefore, this year is planned with regard to the trainee's proposed career in research as well. This elective year provides further training in clinical medicine to complement the second or core clinical year, so that the trainee's total clinical experience is the same as that given in the regular clinical years of medical school (the third and fourth years in the majority of schools). It should be noted that since students in the program receive the M.D. degree upon completion of this final year, great care is taken by the faculty to ensure that students are competent and knowledgeable in current concepts of patient care. It is hoped that the final year will provide the student with an experience which is not repeated during the residency but will serve to complement later phases of training. Thus, future surgeons might be exposed to fields other than surgery, since they will receive intensive training in that discipline during their residency programs.

*Application and Admission Procedure.* The following guidelines should be observed by individuals applying to the Medical Scientist Training Program.

1. The application form for the Duke University School of Medicine should be completed and submitted as early as possible. Since acceptance into the Medical Scientist Training Program is contingent upon acceptance into the School of Medicine, all candidates are first considered to be applicants to the School of Medicine.
2. The application form for the Medical Scientist Training Program should be completed and submitted with the application to the School of Medicine.  
*To ensure full consideration by the Program Selection Committee, this application should be mailed no later than 1 November.*
3. To facilitate review of this application, the Medical College Admission Test should be taken, if possible, in May of the year in which the application is submitted.
4. Only those applicants who are accepted for the program are requested to complete an application form for the Graduate School. The Graduate Record Examination is not required for this purpose.
5. Applicants are notified about acceptance into the program on or about 15 February.

Additional information may be obtained by writing Henry Kamin, Ph.D., Associate Director, Medical Scientist Training Program, Department of Biochemistry, Duke University Medical Center, Durham, North Carolina 27710.

**The Medical Historian Program.** The Medical Historian Program is conducted under the auspices of the School of Medicine and the Graduate School. Two

courses are offered: a combined M.D.-Ph.D. (extending over six years) and a M.D.-M.A. (four or five years depending on use of summer sessions). The choice of Ph.D. or M.A. depends on the career goals of the student. Those wishing to put a major effort into scholarly activities in the history of medicine will generally be advised to undertake the Ph.D. The M.A., taken separately from the M.D., will be attractive to physicians already in practice who wish to pursue an interest in the history of medicine more effectively.

The basic requirements for both courses are two academic years in the School of Medicine consisting of core basic sciences in the first year and core clinical rotations in the second year. The student then enters the Department of History. A range of appropriate courses are available. Following the completion of the Ph.D. or M.A., the student resumes requirements for the M.D. degree.

*Application and Admissions Procedures.* Applicants must meet the requirements for admission to the School of Medicine and the Graduate School in the Department of History. Candidates who have completed two years of medical school will also be considered. In addition to the minimum requirements established by the School of Medicine and the Graduate School, courses in history and in the history and philosophy of science will count in the selection of candidates.

Applicants should complete and submit an application form to the Duke University School of Medicine. After acceptance, selected candidates will be requested to submit an application to the Graduate School for admission to the Department of History.

Additional information may be obtained by writing to the Director, Medical Historian Program, Box 3702, Duke University Medical Center, Durham, North Carolina 27710.

**The Medicine and Public Policy Program.** This program, which normally requires a maximum of five years to complete, is offered to meet the growing demand for persons who combine medical skills and training with a capacity for analytic public decision-making. It aims at training those persons with requisite talent to be leaders in the development and implementation of health policy at all levels of government. Such leadership might be provided as an elected or career public official, as a leader of medical professional organizations, or as a practicing physician or medical scholar active in public affairs.

Utilizing the faculty and resources of the School of Medicine and the Institute of Policy Sciences and Public Affairs, the program offers students a multidisciplinary education that aims at providing:

1. A complete course of study in basic medical sciences and clinical training in the practice of medicine identical in scope and rigor with the education received by students enrolled in the Doctor of Medicine program alone;
2. Familiarity with the organization and financing of health services, with particular focus on the economics and politics of health care;
3. An understanding of the political, bureaucratic, and social processes that define public problems and limit alternative approaches to their solutions;
4. A capacity for quantitative and logical methods of analysis useful in forecasting and appraising policy consequences and in evaluating existing policies;
5. An understanding of the uses and limitations of various analytic techniques and an awareness of the value considerations and ethical choices implicit in particular policy alternatives.

During the first two years at Duke, students enroll in the normal course of study in the School of Medicine. In the third year, course work shifts primarily to the Institute. In the fourth year, students do most of their work in the School of Medicine and complete a client-oriented study of a particular problem in health

policy. During the fifth year, students complete their requirements in the School of Medicine, at the completion of which they receive both the M.D. and A.M. in public policy sciences degrees.

*Admissions.* Students may apply for admission to the program in medicine and policy sciences concurrent with application to the School of Medicine or during their first or second years.

*Applications.* Requests for applications and specific questions about the program should be addressed to the Director of Graduate Studies, Institute of Policy Sciences and Public Affairs, P.O. Box 4875, Duke Station, Durham, North Carolina 27706.

**The M.D.-J.D. Program.** The School of Medicine and the School of Law of Duke University jointly sponsor a program of combined medical and legal education. The program provides an opportunity to acquire a full basic study of the two fields. Upon satisfactory completion of the required course of study, candidates will be awarded both the M.D. and the J.D. degrees.

*Course of Study.* The student in the M.D.-J.D. Program begins a six-year course of study in the School of Medicine. As in the regular M.D. Program, the first year is devoted to the basic medical sciences and the second year to the basic clinical disciplines. At this point the student enters the School of Law, where the first-year curriculum is the same as that of other law students. During the next two years the student may select courses in the Law School which are of special application to medical-legal interests. The sixth and final year is spent in elective clinical work in the Medical School tailored to the student's specialized needs. In addition, the student completes eighteen semester hours, or two summer sessions of elective basic science work.

*Eligibility.* Applicants for the M.D.-J.D. Program must qualify for admission to both the School of Medicine and the School of Law. The usual approach is to apply for both schools simultaneously, thus reserving a place in the program prior to arrival. Applications are also accepted from members of the first and second year medical school class for admission to the School of Law and from the third year law school class for admission to the School of Medicine.

*Application Procedure.* Application forms for the School of Law may be obtained by writing to the Dean, Duke University School of Law, Durham, North Carolina 27706. Applications for the School of Medicine may be obtained by writing to the Committee on Admissions, Box 3710, Duke University Medical Center, Durham, North Carolina 27710.

*Deadlines.* For those seeking simultaneous admission to both schools: spring—at the end of the junior year take the new Medical College Admissions Test (MCAT). June—at the end of the junior year take the Law School Aptitude Test (LSAT). July—between the junior and senior years, write to the Law and Medical Schools for application forms. August—complete the Medical School application and check the box indicating "M.D.-J.D. Program." The application must be submitted prior to the 1 November deadline. September—complete the application form for the School of Law being sure to indicate interest in the "M.D.-J.D. Program" in the area designated *joint degree program*.

Because of the complexity of the admission procedure outlined above, candidates seeking simultaneous admission are urged to give early attention to appropriate deadlines for the aptitude tests and application forms.

**M.D.-M.H.A. Program.** The purpose of this program is to prepare individuals planning to become physicians to be also qualified to assume leadership roles in the development and management of both existing and emerging health care delivery organizations. A principal advantage to this program is that the time





required for completion is five years, instead of the six to seven years which would otherwise be required.

Students undertaking this program enter after the completion of their second year of medical studies. They then take the first three semesters of the basic M.H.A. curriculum. Following this work, they return full-time to the School of Medicine to complete their third and fourth years of medical studies. In the year students return to the School of Medicine, they devote seven hours each semester (fall and spring) to a set of four required courses in the Department of Health Administration. The Medical School will accept these four courses as fulfilling a part of the medical curriculum (as basic science electives). One or more courses in the School of Medicine also may be taken during the three semesters in the department, upon approval of the department. Upon satisfactory completion of all requirements, both degrees are awarded to the candidate.

This program includes 62 semester hours of graduate course credit in addition to the School of Medicine requirements.

*Admissions Requirements.* With approval from the School of Medicine, a medical student may apply to the Department of Health Administration for admission to this program at any time prior to the beginning of the third year of medical studies. Criteria of acceptance by the department are the same as for its other programs.

**The M.D.-M.P.H. Program.** Students enrolled in the School of Medicine, after satisfactory completion of the first two years of the regular curriculum, may request approval to seek a Master of Public Health degree at the University of North Carolina, Chapel Hill, or at another approved institution. The program is



designed to train physicians in epidemiology, biostatistics, environmental and occupational health, and in planning, administering, and evaluating health care delivery systems. Upon receipt of the M.P.H. degree, students are awarded one half year (18 units) of elective credit toward the M.D. degree. This credit award, to be made by the Associate Dean for Graduate Medical Education, may be prorated between clinical and basic elective units depending upon the course of study pursued by the student.

For additional information, interested students should contact the Vice-Chairman, Dr. Robert Sullivan, Department of Community and Family Medicine, Duke University School of Medicine, Durham, North Carolina 27710.

**Commencement.** Graduation exercises are held once a year, in May, when degrees are conferred on, and diplomas are issued to, those who have completed requirements by the end of the spring semester. Those who complete degree requirements at the end of the fall semester or by the end of a summer term receive diplomas dated 30 December or 1 September, respectively. There is a delay of about one month in the mailing of September and December diplomas because diplomas cannot be issued until they are approved by the Academic Council and the Board of Trustees.

## Postgraduate Education

**Residencies.** Appointments are from 1 July through 30 June with few exceptions. Residents receive stipends, professional liability insurance, disability insurance, life insurance, uniforms, and laundry of uniforms.

Residencies offered with the chairman or chief of each service are as follows:

Anesthesiology.....	(Chm.) Merel H. Harmel, M.D.
Family Medicine.....	(Program Director) William Kane, M.D.
Internal Medicine.....	(Chm.) James B. Wyngaarden, M.D.
Dermatology.....	Gerald S. Lazarus, M.D.
Neurology.....	Allen Roses, M.D.
Obstetrics and Gynecology.....	(Chm.) Roy T. Parker, M.D.
Ophthalmology.....	(Chm.) Robert Machemer, M.D.
Pathology.....	(Chm.) Robert Jennings, M.D.
Pediatrics.....	(Chm.) Samuel L. Katz, M.D.
Pediatric Allergy.....	Susan C. Dees, M.D.
Pediatric Cardiology.....	Madison S. Spach, M.D.
Psychiatry.....	(Chm.) H. Keith H. Brodie, M.D.
Radiology.....	
Diagnostic Radiology.....	Charles Putman, M.D.
Nuclear Medicine.....	Jack K. Goodrich, M.D.
Therapeutic Radiology.....	Lowell Miller, M.D.
Surgery.....	(Chm.) David C. Sabiston, Jr., M.D.
General Surgery.....	William G. Shingleton, M.D.
Neurosurgery.....	Robert H. Wilkins, M.D.
Oral Surgery.....	Nicholas G. Georgiade, D.D.S., M.D.
Orthopaedic Surgery.....	J. Leonard Goldner, M.D.
Otolaryngology.....	William R. Hudson, M.D.
Plastic Surgery.....	Nicholas G. Georgiade, D.D.S., M.D.
Urology.....	James F. Glenn, M.D.

Duke University Medical Center is a participating member of the National Intern and Resident Matching Program, 2530 North Ridge Avenue, Evanston, Illinois, and all first-year applicants must register with this program. The hospital is a member of the American Hospital Association, and it is approved by the American Medical Association for internship and residency training and the Joint Commission of Accreditation of Hospitals.

Both men and women graduates of any Class A medical school are eligible for appointments. First year appointments are rarely available to graduates of medical

schools outside the United States and Canada, but a limited number of residencies and research fellowships are available following certification by National Board of Medical Examiners (Part I and II) or VQE. All foreign medical graduate trainees will be limited to a stay of two years by federal law. All applicants will be considered without regard to race, color, religion, sex, or national origin.

Reasonable requests for reduced scheduling will be considered. Inquiries should be directed to the training program directors of approved residencies.

The Durham Veterans Administration Hospital adjoins the Duke University Campus and is operated under the supervision of the Vice President's Committee of the Duke University Medical Center. The full-time professional staff of the V.A. Hospital are all faculty members of the School of Medicine. All training programs are integrated with corresponding programs at the Duke University Medical Center, including rotation of house officers at each hospital.

All residents and clinical fellows are required to be licensed by the State of North Carolina. This may be accomplished by (1) a residency training license (fee \$10) that covers only training by Duke and is not convertible to a full North Carolina license or (2) a full North Carolina license (fee \$100) that is a complete medical license obtained either by State Boards or National Boards and is fully reciprocal with other states for full licenses. Duke Medical Center cannot make applications for house staff. Since house staff members should have the license before beginning duties, arrangements for the license should be made in advance. For additional licensure information, contact Bryant Paris, North Carolina State Board of Medical Examiners, 222 North Person Street, Raleigh, North Carolina 27601.

Application forms and information for residencies or fellowships may be obtained by writing the chairman of the appropriate department, Duke University Medical Center, Durham, North Carolina 27710.

**Continuing Medical Education.** Numerous formal postgraduate courses are given throughout the entire year for physicians in general practice as well as in all specialties. Conferences and tutorial seminars are also available to any physician who desires to attend and participate. Physicians in practice may make arrangements for a period of one day or more for courses tailored to their particular interests. These personal contacts with senior faculty and residents, including patient examinations as well as follow-up care, provide in-house training experience.

The annual one-week course held in Atlantic Beach in mid-July continues to be one of the most well-attended programs in the region.

For additional information, please contact M. Henderson Rourke, Jr., M.D., Director, Continuing Education, Duke University School of Medicine, Durham, North Carolina 27710.

# Student Life



## The University

Duke University, located in Durham, North Carolina, has an enrollment of 9,936 students from all fifty states and from many foreign countries. Currently, Trinity College of Arts and Sciences, the Graduate School, and the Schools of Business Administration, Divinity, Engineering, Forestry, Law, Medicine, and Nursing comprise the University.

Durham, with a population of approximately 100,000, is in the Piedmont region of North Carolina, which has easy access to the sea coast and mountains. It is one of the three cities bounding the Research Triangle Park where numerous private research laboratories and governmental agencies are located. Duke University is twenty-five miles from North Carolina State University in Raleigh and eight miles from the University of North Carolina at Chapel Hill.

## Conduct of Students

Duke University expects and will require of all its students cooperation in developing and maintaining high standards of scholarship and conduct.

All students are subject to the rules and regulations of the University which are currently in effect, or which, from time to time, are put into effect by the appropriate authorities of the University.

Any student, in accepting admission, indicates the willingness to subscribe to and be governed by these rules and regulations and acknowledges the right of the University to take such disciplinary action, including suspension and/or expulsion, as may be deemed appropriate, for failure to abide by such rules and regulations, or for conduct adjudged unsatisfactory or detrimental to the University.

## Living Accommodations

**Residence Hall Accommodations.** Trent Drive Hall, located near the Duke Medical Center, houses graduate and professional school women students and undergraduate students. All assignments are made on a first-apply, first-assigned basis.

The limited number of single rooms, located in the undergraduate section, are usually reserved by previous occupants for the following academic year. Other rooms are equipped with the following for each student: a bed with innerspring mattress, chest with mirror, desk with chair, and book shelves.



**Town House Apartments.** Duke University operates Town House Apartments primarily for graduate and professional school students. Families and other groups are housed in individual apartments if the interests of the University are served. The setting of these apartments provides single graduate students with a comfortable, home-like atmosphere. Some of the thirty-two air-conditioned apartments are equipped for two students, and the remaining units are equipped for three students.

**Central Campus Apartments.** Duke University operates a 500-unit housing facility known as Central Campus Apartments. Completed in mid-1975, the complex provides basic housing for married graduate and professional school students, single undergraduate and graduate students, and single and married students in allied health programs. Assignments are made on a first-apply, first-assigned basis.

For single students, one-bedroom and two-bedroom apartments are fully furnished. The apartments for married students include a few furnished efficiencies and a number of one-, two-, and three-bedroom units in which the kitchen, living room, and first bedroom are basically furnished. These apartments are furnished and equipped in such a way as to provide economy and convenience to eligible married students while allowing for individuality.

**Off-Campus Housing.** The Department of Housing Management maintains lists of rental apartments, rooms, and houses provided by Durham property owners or real estate agents who will agree not to discriminate in the rental property because of the race, sex, creed, or nationality of a prospective tenant. These lists are available in the department only. Off-campus rental properties are not inspected or approved, nor does the University or its agents negotiate with owners for students, faculty, or staff.

*Application Procedures.* When students are informed of their acceptance to the Medical School, they will also receive a form on which to indicate preference for University housing. This form should be returned to the Medical School where it will be forwarded to the Department of Housing Management. Detailed information on the types of accommodations and application forms will be forwarded to the accepted student. However, if additional information is desired prior to a student's acceptance, please write to the Manager of Apartments and Property, Department of Housing Management, Duke University, Durham, North Carolina 27706.

**Dining Facilities.** The Medical Center cafeteria serves students and employees. Other dining facilities located near the Medical Center are in the Union Building, which has two cafeterias, a snack bar, and the Oak Room, and in Trent Drive Hall which has a cafeteria and Gradel's, a deli/grill service. Gradel's is open from 9:30 A.M. to midnight. See the section on Dining Facilities in the chapter on Financial Information for approximate food costs.

## Services Available

**Student Personal Advisory Program.** One important objective of Duke University School of Medicine is to promote an informal, cordial student-faculty relationship. All entering students are matched on a voluntary basis to advisers who share mutual interests. These faculty advisers will be available to the students throughout their undergraduate medical education. Advisers are assigned from a group of faculty members who have volunteered to serve in this capacity.

**Student Health Service.** In recognition of the unique health needs of medical students whose activities bring them into far greater contact with communicable

disease than the average university student, a special health program for medical students has been established. Each freshman will submit, prior to entry, the standard Duke History and Physical Examination form to be completed by a physician. This will include urinalysis and hemoglobin. During orientation week freshmen students will be given an appointment to report to the Student Health Services for baseline immunizations to include diphtheria-tetanus booster, polio booster, and IPPD tuberculin test. The IPPD will be repeated in the junior year. In the senior year each medical student will receive a complete physical examination including urinalysis, hemoglobin, and IPPD. Chest x-rays will be done only on those who have positive tuberculin reactions. A special fee will be required of each medical student to cover the extra cost over the four-year period.

Students receive ambulant care at the Student Health Clinic during regular office hours.

The main components of the Health Service include the Student Health Clinic in the Marshall I. Pickens Rehabilitation Center, located at the corner of Trent Street and Erwin Road, and the infirmary on the East Campus. For treatment of most illnesses or injuries, students should first contact the Student Health Clinic. Transportation may be made via the campus bus, or emergency transportation can be obtained from the Duke Campus Police or the Durham Ambulance Service.

The facilities of the Student Health Service Clinic are available during both regular and summer sessions to all currently enrolled full-time students attending classes at Duke. The facilities of the University Infirmary are available during the regular sessions only from the opening of the University in the fall until Graduation Day in the spring.

The resources of the Duke University Medical Center are available to all the Duke students and their spouses and children. Charges for any and all services received from the Medical Center are the responsibility of the student as are the charges for services received from physicians and hospitals not associated with Duke University.

For emergency problems when the Student Health Clinic is not open, the emergency room at Duke University Medical Center is available. The financial responsibility for expenses incurred in the emergency room rests with students or their parents.

In addition to the Student Health Service, the University makes available a plan of accident and sickness insurance to cover all full-time students who are enrolled in the University. This plan is designed to complement services normally not accessible to students through the Student Health Service coverage; it covers students both on and off campus, at home, or while traveling between home and school during the interim vacation periods throughout the one-year term of the policy.

The Student Health Program does not provide health care for spouses and dependent children of married students. There are provisions in the insurance plan, however, for coverage of the married student's family. Preexisting conditions of dependent spouse and/or children are not covered.

*The Duke Student Accident and Sickness Policy.* The Duke Student Accident and Sickness Insurance Policy is available at a reasonable charge. The supplemental coverage provides coverage for hospitalization and major medical expenses. The policy is more fully described in a brochure sent through the bursar's office.

*Vacations and Free Quarters.* All students should take note that the Student Health Service does not provide care during quarters for which fees and tuition are not being paid.

The supplemental health insurance plan is designed to complement services normally available through the University Student Health Service in order that students may be protected at times when the service does not apply and for

accidents and illnesses which it does not cover. This plan provides protection twenty-four hours per day during the full twelve-month term of the policy for each student insured. Students are covered on and off the campus, at home, while traveling between home and school, and during interim vacation periods.

Information concerning the availability of additional health care may be obtained from the Student Health Service. These rules and regulations are those in effect at the time of publication of this bulletin, but are subject to change at a later date.

**Counseling and Psychological Services.** Counseling and Psychological Services (CAPS) is located in Suite 214, Old Chemistry Building, on West Campus next to the Medical School. Services are available to all undergraduate, graduate, and professional students enrolled at Duke University. CAPS provides a coordinated and comprehensive range of services including evaluation and counseling regarding personal problems relating to family, social, academic, vocational, and sexual matters; psychological testing encompassing educational, vocational, and personality assessment; and psychotherapy for more serious psychological problems.

The professional staff is composed of clinical social workers, psychiatrists, and clinical and counseling psychologists who are experienced in working with young adults. When a student and a staff member have evaluated the student's concern, then individual sessions, joint sessions with couples, and/or group counseling and psychotherapy may be recommended to help the student resolve the concern. CAPS maintains a policy of *strict confidentiality* about each student's contact with the CAPS staff. Such information can be released, however, upon the student's specific written authorization.

There are no charges for initial evaluation and brief counseling/psychotherapy; however, where extended psychotherapy interviews are indicated, a fee commensurate with the student's financial resources will be arranged on an individual basis. If appropriate, a referral may be made to other staff members or to a variety of local resources including multidisciplinary mental health professionals in private practice and clinic settings.

Appointments may be made by telephone or at the CAPS office. Office hours are Monday through Friday between 8 A.M. and 5 P.M. If a student's concern needs immediate attention, it should be indicated by the student and every effort will be made to arrange a session with a counselor immediately.

Additionally, standardized testing is administered for the University community by CAPS. These include the Graduate Record Examination (GRE), Medical College Admission Test (MCAT), Law School Admission Test (LSAT), and Graduate Management Admission Test (GMAT). CAPS also maintains a library of a wide selection of vocational and educational program resource materials to assist students in choosing a career and/or further training programs in graduate or professional study.

Another important function of CAPS is the availability of the staff to the entire University community for consultation and participation in educational activities regarding student development and general mental health issues. The staff works with other campus personnel including administrators, faculty, the Student Health Service, Religious Life Staff, Residential Advisers, Office of Placement Services Staff, Freshman Advisory Counselors, PISCES, Project Wild, and other student groups in meeting whatever student needs are identified through such liaisons.



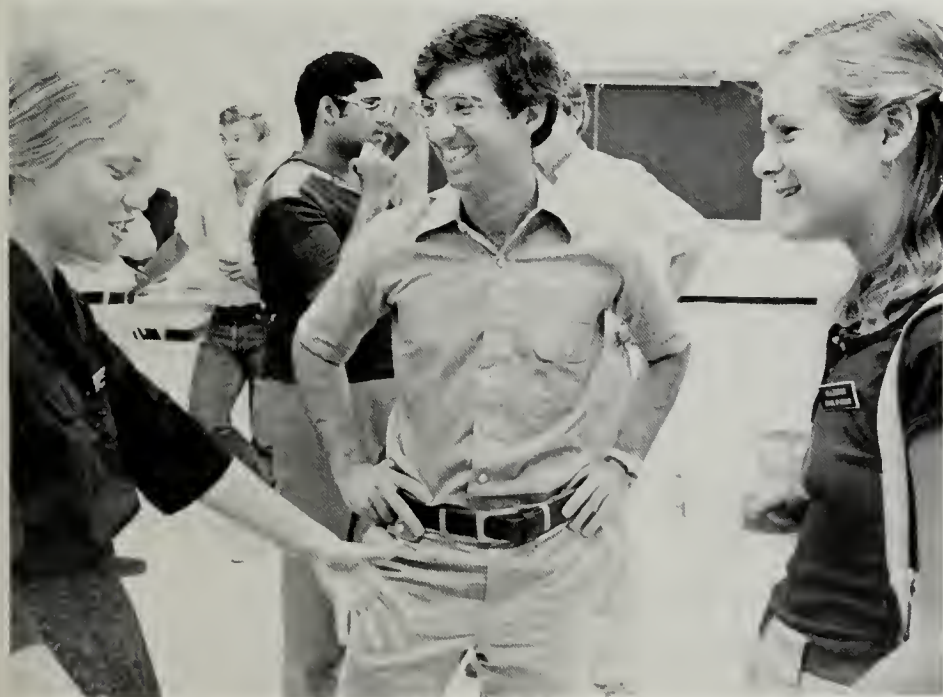
## Student and Professional Organizations

**Alpha Omega Alpha.** Alpha Omega Alpha Honorary Medical Fraternity was organized nationally in 1902 and the Duke Chapter (North Carolina Alpha) was chartered in 1931. The aims of this society are the promotion of scholarship and research in medical schools, the encouragement of high standards of character and conduct among students and graduates, and the recognition of high attainment in medical science, practice, and related fields. Students who have demonstrated leadership and academic promise of future achievement are elected. Membership is limited to no more than one sixth of any class and of these as many as one half may be elected in the junior year. Honorary membership in the fraternity, as well as honorary alumni and faculty membership, may also be conferred upon certain physicians who have distinguished themselves in the various areas of medical teaching, research, and practice.

**Davison Society.** All medical students are dues-paying members of the Davison Society which is governed by elected officers and class representatives comprising the Davison Council. The Davison Council functions as the official representative body for Duke medical students and as such nominates or elects students to serve on all appropriate Medical Center and University committees including: MedSAC, MEPAC, Admissions, Curriculum, Judiciary, Dean's Hour, Faculty-Chairman Search, Library, Human Experimentation, and several other committees.

Currently subcommittees of the council are looking at the issues of curriculum evaluation; primary care at the Medical Center and in medical education at Duke; and communication to all students of the opportunities available for study away from the University such as externships and residencies.

Student representatives are appointed by the Davison Council to attend the annual meetings of the American Medical Student Association, North Carolina Medical Society, American Medical Association, Association of American Medical





Colleges, the Southern Medical Association, and other meetings of importance to medical students. Students have been sponsored to attend the Congress on Medical Education, the AMA Congress on Medical Ethics, American Women's Medical Association, and the Student National Medical Association annual meetings.

Publications of the Davison Society include a weekly newsletter, *Shifting Dullness*, and a student directory. Socially, the society sponsors beer and pizza dinners with faculty and administrators, class parties, a spring picnic, a fall dance, the annual spring Medical School Show, and a round-robin tennis tournament with the faculty.

Other medical student groups recognized by, and in part funded by, the Davison Society include the American Medical Student Association, the American Medical Women's Association, the Student National Medical Association, the Sex Education Committee (which runs an elective course for nursing and medical students, an evening course for undergraduates, and gives courses in the local junior high schools), *First Contact* (a bimonthly periodical devoted to ethical, social, and political issues in medicine), and the East End Clinic (a free clinic run by medical, nursing, pharmacy, and other students from Duke and the University of North Carolina, Chapel Hill).

The Honor Code is also authorized and administered by the Davison Society.

**The Engel Society.** The Engel Society, established in 1966 as a memorial to Professor Frank L. Engel, is designed to promote intellectual and social interaction between students and faculty. Membership is limited to six junior students and six senior students who have demonstrated an inquisitive nature, humanitarian interests, and high scholastic ability. Four faculty members are selected annually by members of the society for three year terms. Six dinner meetings with guest speakers are held each year. Other students may be invited to participate.

**Ganglion Society.** The Ganglion Society (the Duke neuroscience society) seeks to promote interest in the neurosciences and to facilitate communication among individuals studying and working in this multidisciplinary field. To accomplish this, the society publishes *The Neurotransmitter*, a weekly bulletin of local events in the basic and clinical neurosciences. It also sponsors informal evening discussion sessions featuring visiting scientists and clinicians prominent in one or more areas of the neurosciences. Membership and participation in these activities is open to anyone with an interest in the neurosciences.

**Duke University Medical Alumni Association.** The Duke Medical Alumni Association currently consists of nearly 6,000 members including all graduates of the Medical School, past and present faculty, and all past and present house officers of Duke Hospital including those who are not Duke Medical School graduates. Associate membership is available to alumni of other Medical Center programs. A quarterly newsletter is sent to all members each year. Around clusters of five-year classes, November reunions are held annually in Durham. Alumni groups have been organized in several states where luncheon and dinner meetings are held following the meetings of the American Medical Association, the American College of Physicians, the Southern Medical Association, the North Carolina Medical Society, the Medical Society of Virginia, the American Academy of Pediatrics, and several other departmental specialty society meetings.

*Officers.* President: Ralph P. Baker, M.D., 1943, Newberry, South Carolina; Secretary-Treasurer: Jay M. Arena, M.D., 1932, Durham, North Carolina.

## Awards and Prizes

**Davison Scholarship.** The Davison Scholarship award, consisting of \$1,000, was formerly donated by the late Dean Wilburt C. Davison. The award is now

supported by the Davison Club in the memory of Dean Davison and is awarded to enable a medical student to participate in a clinical science elective outside the United States preferably in an area of primary care. Any student may apply for the award. For consideration for the scholarship, the elective must be approved by the Study Away Committee.

**Thomas Jefferson Award.** This award, consisting of \$100, a certificate, and a book recognizes a graduating senior student who has made outstanding contributions to the University or to fields which have not been traditionally confined to science and medicine. The award is given by the Awards Committee.

**Lange Medical Publications Awards.** Two seniors selected by the Awards Committee for excellence in academic and service work are awarded four books published by the Lange Medical Publications. The books are selected by individual recipients.

**The Joseph Eldridge Markee Memorial Award in Anatomy.** This award, donated by the friends and family of the late Dr. J. E. Markee, James B. Duke Professor of Anatomy and chairman of the Anatomy Department from 1943 to 1966, consists of a certificate, medallion, and cash award of \$200. It is presented by the Department of Anatomy to the most outstanding student in anatomy during the first year in the Medical School.

**C. V. Mosby Book Award.** Four graduating senior students are selected by the Awards Committee for active participation in service to the students, community, and medical school. The award is a Mosby book not to exceed \$30.

**Trent Prize.** An annual award of \$100 is given to a Duke medical student for the best essay on any topic in the history of medicine and allied sciences. Mary Trent Semans established this award in memory of the late Josiah C. Trent to encourage students to undertake independent work in the history of medicine and to utilize the resources of the Trent Collection.

**Upjohn Award.** The award consists of \$200 cash and a certificate and is presented to a Duke graduating senior for excellence in community health science projects and service to the community.

**Sandoz Award.** This award is given to a senior student who has done distinguished work in basic science research or clinical research. Students will be nominated for this award by departmental chairmen with whom their work has been done and voted upon by the Awards Committee. It consists of a plaque and a check for \$100 and is limited to one student.

**Other Awards.** Throughout the year, Duke Medical School receives notification of awards consisting of books, money, and/or plaques or medals to be awarded to students in a variety of fields at all medical schools on a national competitive basis selected by committees of the sponsoring organizations. These awards are screened by the assistant dean for Student Affairs who announces awards which are of interest to the Duke medical students. Since these are national competitions, they vary from year to year.

# Admission





## Admission Procedures

Good study habits, intelligence, character, and integrity are essential qualifications for admission. Beyond this, premedical students should strive for an education that develops abilities to observe critically, think analytically, and work independently. Though a knowledge of basic scientific principles should be secured, the competence with which premedical students conduct their undergraduate careers is of more importance than the specific subjects which they study.

**Application for Admission.** Application forms for the Duke University School of Medicine may be obtained by writing the Committee on Admissions, Box 3710, Duke University Medical Center, Durham, North Carolina 27710. Prior to 1 August, all requests for application materials will be assigned to a mailing list. The materials will be forwarded during the first week in August. The deadline for receipt of application requests is 15 October, and the deadline for receipt of applications is 1 November.

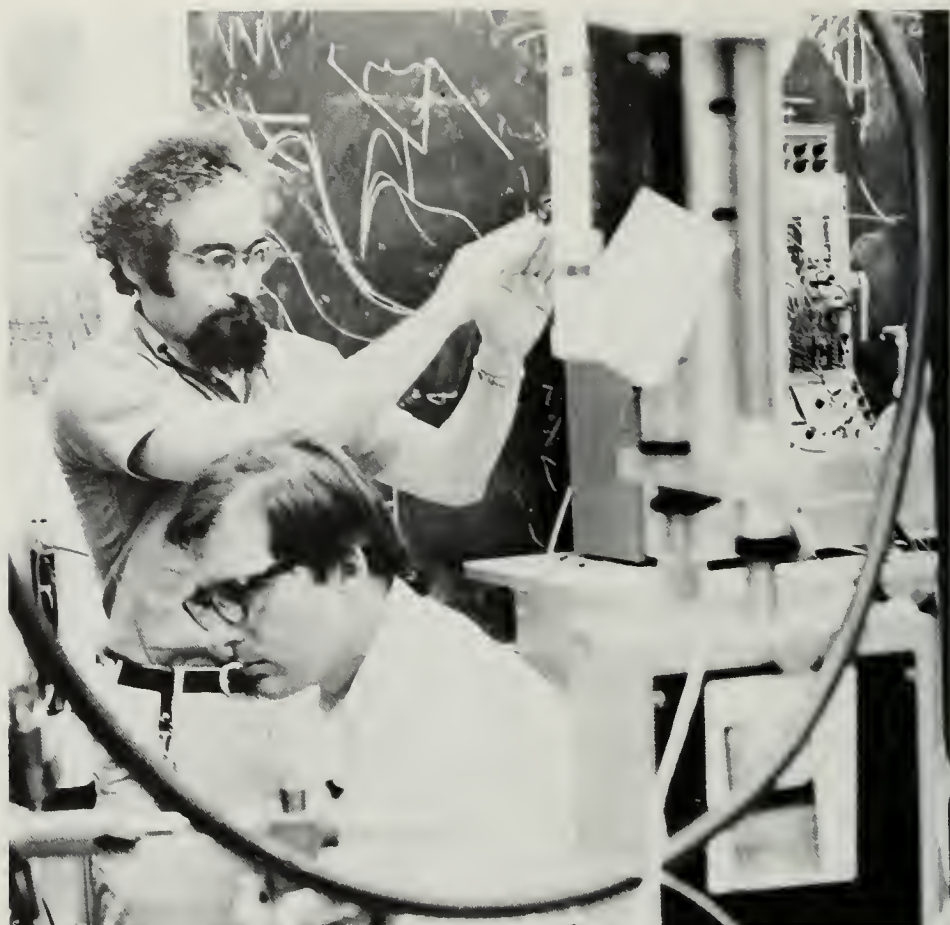
**Requirements.** Admission to the School of Medicine requires a minimum of ninety hours of approved college credit including one year of college English (consisting primarily of expository English composition), one year of inorganic chemistry, one year of organic chemistry, one year of physics, one year of biology and/or zoology, and one year of calculus. All science requirements must be completed not more than seven years prior to entrance.

The New Medical College Admission Test, administered by the American College Testing Programs and Services, P.O. Box 414, Iowa City, Iowa 52240, is required of all applicants. This test is given in April and October of each year at numerous colleges throughout the United States. Students should consult their premedical advisers and arrange to take this test in April of the year they plan to submit applications for admission.

## Selection

The earliest date of notification of acceptance is 15 November for students entering the following August. Data on each candidate are carefully evaluated by the Committee on Admissions. If the distance is not too great, a personal interview will be conducted at Duke for those students with satisfactory credentials. Other candidates will be referred for personal interviews with regional representatives of the Admissions Committee. Those candidates who demonstrate the most promise for exceptional performance in their future practice of medicine are admitted on





the basis of merit and are notified as soon as possible whether or not they have been accepted. In order to ensure enrollment, accepted candidates must return a signed agreement and a \$50 deposit within three weeks after notification. Since admission is offered a considerable period in advance of matriculation, it is provisional upon the successful completion of remaining required premedical college courses.

## Transfer

Applicants who have completed the basic sciences in other medical schools will be considered for transfer only as space permits. Such transfer students are required to complete the second and fourth years of the Duke curriculum.

Performance of Part I of the National Board Examination is a requirement for transfer applicants. Duke does not sponsor applicants to take the National Board Examination, although the scores must be received as part of the evaluation procedure.

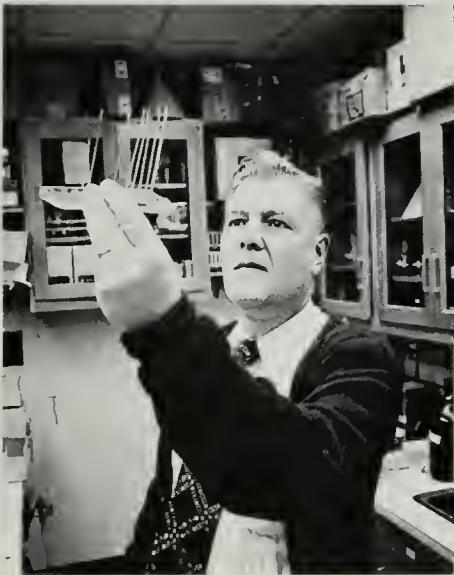
Effective with the academic year 1978-79, the policy governing tuition for transfer students is that they will pay the same tuition in their initial year and all subsequent years as the class with which they enter.

Requests for application materials are accepted after 15 November. 1 March is the deadline date for the receipt of applications. Personal interviews will be

arranged for those with satisfactory credentials. Transfers into the freshman or senior year are not permitted.

## Advanced Placement

Advanced placement is offered to qualified freshman students on an optional basis for the following first semester courses: anatomy, biochemistry, genetics, and physiology. Students desiring consideration for advanced placement are required to take examinations in applicable subjects during the first week of medical school. Those who are granted and accept advanced placement for a specific course are not required to enroll in that course but will be responsible for arranging mutually satisfactory substitutions with the appropriate department chairman.



Students who have been awarded Ph.D. degrees in biomedical or preclinical sciences may apply for a three-year program to obtain their M.D. degrees. This program consists of the regular core basic science courses required of all freshman medical students, core clinical rotations during the second year, followed by senior clinical electives.

## Reapplication

Students who wish to apply for a second time should write to the Medical School Admissions Office requesting new application forms. Supporting documents will be transferred to the new application file. These documents will be kept on file for three years.

Enrolled students who have been dismissed from Duke Medical School may be considered for readmission only through reapplication to the Medical School Admissions Committee.

## Summary

Three years of college work, thirty five dollars (\$35) nonrefundable application fee, fifty dollar (\$50) deposit within three weeks of notification of acceptance, and the New Medical College Admission Test are required. The number of students in the 1979-1980 freshman class is 114.

Applications for admission must be received between 1 August and 1 November, 1979. Students will be notified beginning 15 November, 1979. Orientation begins 22 August, 1980.

### Roster of Regional Representatives of Admissions Committee

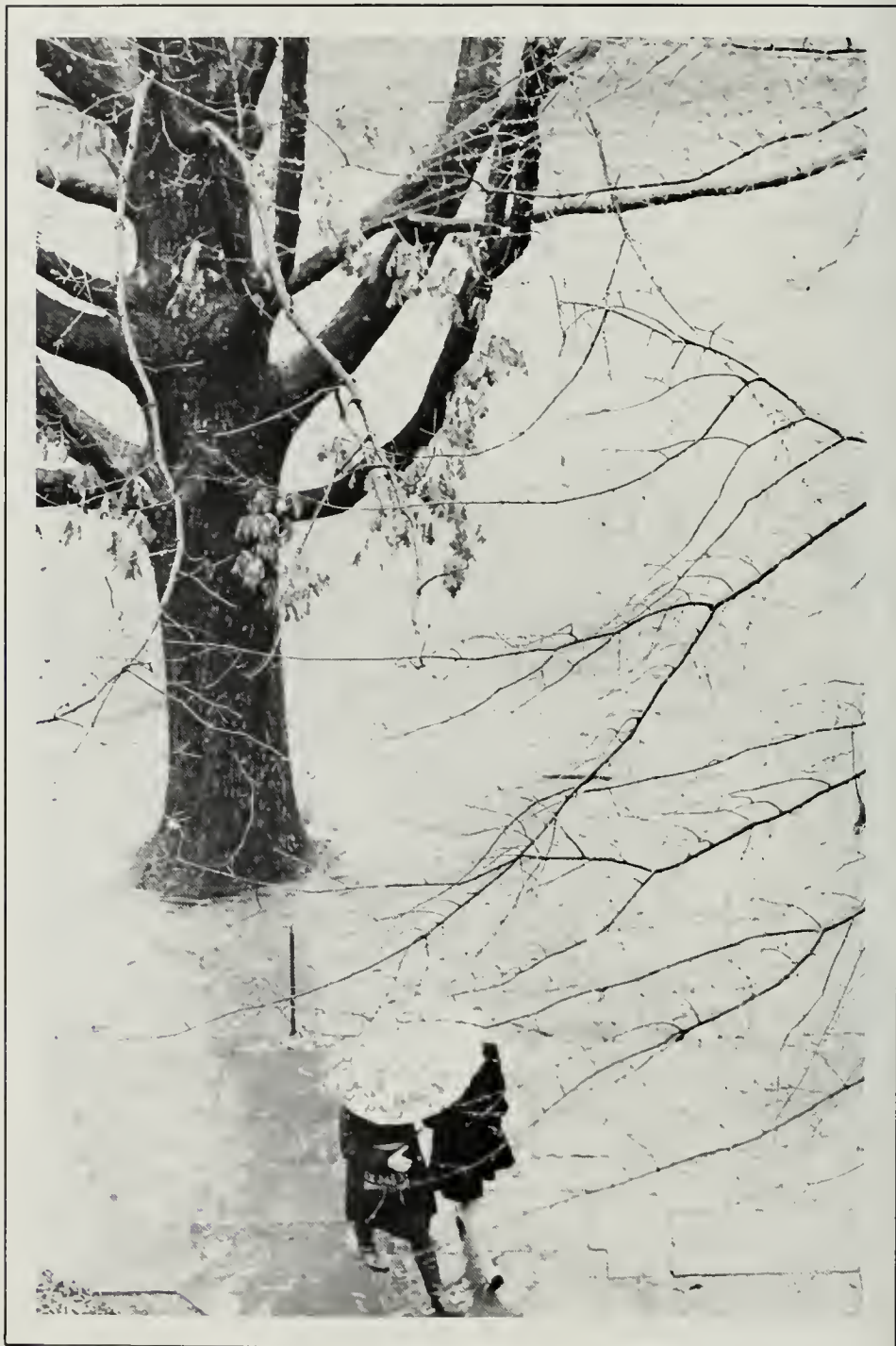
Alabama:	<i>Birmingham, Ben V. Branscomb</i>
Alaska:	<i>Anchor Point, Milo H. Fritz; Sitka, J. Paul Lunas</i>
Arizona:	<i>Phoenix, Robert H. Barnes; Scottsdale, Boyd H. Metcalf</i>
Arkansas:	<i>Little Rock, Rosalind Smith Abernathy, E. Clinton Texter, Jr.</i>
California:	<i>Anaheim, George Hayter; Bakersfield, Victor S. Constantine; Berkeley, H. I. Harvey; Beverly Hills, Ben Kohn; Burlingame, J. M. Javer; Gardena, James S. Mayson; Long Beach, A. Brian Davis; Los Angeles, Earl W. Brian, Kenneth P. Ramming, James L. Scott, Douglas F. Smiley; Menlo Park, Gustave Freeman; Oakland, David S. Forth; Oceanside, Barry B. Campbell; Palo Alto, James B. Golden; Redlands, Perry Dyke; Sacramento, William R. Nesbitt; San Bernardino, Irving E. Allen; San Diego, Bruce Horten; San Francisco, Gert Brieger, Philip G. Hoffman, Andrew Nadell, R. Gray Patton; San Mateo, Lester H. Margolis; Woodland Hills, Andrew A. Bonin</i>
Canada:	<i>Montreal, J. E. Gibbons; Toronto, John B. Armstrong</i>
Colorado:	<i>Denver, Ray Pryor, Fred W. Schoonmaker</i>
Connecticut:	<i>Hartford, William H. Glass; New Haven, Saul A. Frankel, Henry G. Magendantz, Ned M. Shutkin</i>
District of Columbia:	<i>Washington, Linda E. Green</i>
England:	<i>AP0 N.Y., N.Y., John P. Tindall</i>
Florida:	<i>Boca Raton, Eugene L. Horger; Lakeland, John Verner, Jr.; Miami, Stanley J. Cannon, James J. Hutson; St. Petersburg, David S. Hubbell; Tampa, Richard G. Connor</i>
Georgia:	<i>Albany, Havner H. Parish, Jr.; Atlanta, Crawford F. Barnett, Jr.; Decatur, William W. Blackburn</i>
Germany:	<i>Berlin, Otto H. Gauer</i>
Hawaii:	<i>Honolulu, Richard K. Blaisdell, James G. Harrison, Jr.; Kailua, Stanley Karansky</i>
Idaho:	<i>Boise, William L. Venning; Idaho Falls, Reid H. Anderson</i>
Illinois:	<i>Chicago, James S. Arnold, George H. Gardner, Daniel J. Pachman, Joe L. Simpson; Evanston, Donald R. Mundie, Milton Weinberg, Jr.; Geneva, Charles A. Hanson; Monmouth, Kenneth E. Ambrose</i>
Indiana:	<i>Angola, Norman W. Rausch; Beech Grove, John D. Graham; Indianapolis, Norman H. Bell</i>



Iowa:	<i>Davenport</i> , Alexander W. Boone, Jr.
Kansas:	<i>Emporia</i> , Gould C. Garcia; <i>Salina</i> , Roy B. Coffey
Kentucky:	<i>Lexington</i> , Kearns R. Thompson; <i>Louisville</i> , Billy Franklin Andrews, George Uhde
Louisiana:	<i>New Orleans</i> , Nancy Haslett, Richard M. Paddison, George H. Porter, Virginia Porter
Maine:	<i>Portland</i> , E. Charles Kunkle
Maryland:	<i>Baltimore</i> , C. Edward Leach; <i>Towson</i> , William C. Battle
Massachusetts:	<i>Boston</i> , Benjamin T. Jackson, Ellison C. Pierce, Jr.; <i>Cambridge</i> , Paul N. Chervin; <i>Springfield</i> , George A. Sotirion
Michigan:	<i>Ann Arbor</i> , George E. Bacon, Donald L. Rucknagel; <i>East Lansing</i> , Norbert Enzer; <i>Port Huron</i> , William T. Davison
Minnesota:	<i>Minneapolis</i> , Lewis W. Wannamaker; <i>Rochester</i> , William M. O'Fallon, Richard E. Symmonds
Missouri:	<i>Columbia</i> , John T. Logue; <i>St. Louis</i> , Thomas B. Ferguson, Roman L. Patrick
Nebraska:	<i>Omaha</i> , Gayle H. Bickers, Helen Starke
New Hampshire:	<i>Hanover</i> , George Margolis, R. J. Vanderlinde
New Jersey:	<i>Morristown</i> , Kenneth Gould, Jr.; <i>New Brunswick</i> , William E. McGough, Bernard A. Rineberg; <i>Watchung</i> , R. Christopher Stucky
New Mexico:	<i>Artesia</i> , C. Pardue Bunch
New York:	<i>Albany</i> , Wallace N. Jensen; <i>Buffalo</i> , Oliver J. Bateman; <i>East Rockaway</i> , Vincent A. Joy; <i>Endicott</i> , Vincent Giordano; <i>Ithaca</i> , John G. Maines; <i>Lockport</i> , Frank H. Crosby; <i>New York</i> , William A. Gay, Jr., David S. Goldman, Eddie L. Hoover, Seymour R. Kaplan, Michael J. Lepore, Leonard H. Schuyler, Robert A. Shimm, David N. Silvers, Nathan St. Amand, Melvin L. Thrash; <i>Pittsford</i> , Rufus S. Bynum; <i>Rochester</i> , David N. Broadbent; <i>Syracuse</i> , Alfred S. Berne, Herbert Lourie, L. Stewart Massad, James E. Sheehy
Ohio:	<i>Cincinnati</i> , Murray B. Sheldon, Jr.; <i>Cleveland Heights</i> , Robert B. Kubek; <i>Columbus</i> , Robert J. Atwell, Charles A. Doan, Lucy R. Freedy, George W. Paulson, James V. Warren; <i>Dayton</i> , Stuart R. Ducker; <i>Elyria</i> , William L. Hassler; <i>Toledo</i> , George F. Alter
Oklahoma:	<i>Muskogee</i> , Robert H. Gibbs
Oregon:	<i>North Bend</i> , Clifford J. Schostal; <i>Portland</i> , Joseph F. Paquet
Pennsylvania:	<i>Bethlehem</i> , Ralph K. Shields, James G. Whildin; <i>Bryn Mawr</i> , John V. Blady, <i>Camp Hill</i> , Alfred J. Sherman; <i>Doylestown</i> , Zachary A. Simpson; <i>Dunmore</i> , Louis C. Waller; <i>Harrisburg</i> , Earl S. Moyer; <i>Johnstown</i> , W. Frederick Mayer; <i>Philadelphia</i> , Max W. Fischbach, Alfred M. Sellers; <i>Pittsburgh</i> , Richard A. Green, Jack D. Myers; <i>Williamsport</i> , William R. Brink
Puerto Rico:	<i>Santurce</i> , Rafael Hernandez-Saldana
Rhode Island:	<i>Providence</i> , Richard P. Sexton
South Carolina:	<i>Charleston</i> , Edward Frost Parker; <i>Columbia</i> , Collin F. Baker, Ben N. Miller, James M. Timmons; <i>Greenville</i> , Raymond C. Ramage
Tennessee:	<i>Chattanooga</i> , Richard Van Fletcher; <i>Knoxville</i> , Alan Solomon; <i>Memphis</i> , William L. Byrne; <i>Nashville</i> , Walter G. Gobbel, Jr., Alexander C. McLeod, Greer Ricketson
Texas:	<i>Austin</i> , Frank A. Morris, Jr., <i>Dallas</i> , Reuben H. Adams, W. Crockett Cheers, Jr., A. James Gill, William Shapiro; <i>Fort Worth</i> , Henry L. Burks; <i>Houston</i> , Elizabeth B. Powell, H. Grant Taylor; <i>Midland</i> , Dorothy B. Wyvell
Utah:	<i>Salt Lake City</i> , Andrew Deiss
Vermont:	<i>Burlington</i> , Edward S. Horton
Virginia:	<i>Richmond</i> , R. Lewis Wright; <i>Waynesboro</i> , Thomas L. Gorsuch
Washington:	<i>Bellevue</i> , David T. Pitkethly; <i>Bothell</i> , Ronald C. Reed
Wisconsin:	<i>La Crosse</i> , C. Norman Shealy; <i>Milwaukee</i> , Jack L. Teasley



# Financial Information



## Fees and Expenses

**Tuition.** The following table represents an estimate of a student's necessary expenses in the School of Medicine. The total of these figures suggests a basic minimum budget of approximately \$9,500. These are estimated figures only and are based on a 1978 survey of enrolled students. Tuition and fees are subject to change without notice. Allowances for recreation, travel, clothing, and other miscellaneous items must be added to this estimate with allowances for individual needs and tastes.

Tuition	\$5,760.00
Accident and Sickness Insurance (subject to change)	95.30
Instruments* (first year only)	300.00
Laboratory Fee (includes microscope rental, first year only)*	150.00
Laboratory coats	60.00
Annual cost of books: first year	336.00
Annual cost of books: second year	224.00
Annual cost of books: third and fourth year	200.00
Lodging	1,500.00
Board (University Dining Halls): first and second year	1,411.00
Board (University Dining Halls): third and fourth year	1,269.00
Special Student Health Service† (first year only)	50.00
Basic Student Health Service†	143.75
Student Government (Davison Society)†	15.00
Motor Vehicle Registration	20.00

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\*Sphygmomanometer, ophthalmoscope, otoscope, and other equipment required of each student must conform to rigid standards.

†Mandatory fee. For details, please refer to Student Health Service.

There are four dates in each academic year when approximately one quarter of the total tuition becomes payable. These dates apply whether a student is in the first year (two semesters), or on eight-week terms. The dates for the 1979-1980 academic year are Friday, 17 August 1979; 19 October 1979; 11 January 1980; and 7 March 1980. An additional billing will be made to those who elect to attend the summer terms.

The Office of the Bursar will send bills as a reminder of the exact amount payable to the University. A late fee of \$10 will be assessed for any portion of the tuition and other charges that remain unpaid after the due date and for which prior arrangements have not been made with the bursar's office. In the event of death, or

involuntary withdrawal to enter the armed services, refunds will be made on a pro rata basis. In all other cases of withdrawal, students or their parents may elect to have tuition and room and board charges refunded or carried forward as a credit for later study, according to the following schedule:

1. Withdrawal before the beginning of classes: full refund.
2. Withdrawal during the first or second week of classes: 80 percent.
3. Withdrawal during the third, fourth, and fifth week of classes: 60 percent.
4. Withdrawal during the sixth: 20 percent.
5. No refunds after the sixth week.
6. Tuition or other charges paid from grants or loans will be restored to those funds, not refunded or carried forward.

No credit will be given for any term in which the tuition has not been paid, whether the work has been at Duke or elsewhere. A student is not eligible to attend classes or to make use of University facilities if in default on payment of funds to owed the University. Nonreceipt of a bill does not exonerate the student from payment or from assessment of late fees. It is not advisable for students to attempt outside work to defray their expenses during the academic year. Spouses of medical students desiring employment may secure information from the Duke University Personnel Office.

**Debts.** No records are released and no students are considered by the faculty as candidates for graduation until they have settled with the bursar for all indebtedness. Failure to pay all University charges on or before the times specified by the University for that semester will bar the student from class attendance until the account is settled in full.

## Living Accommodations

**Housing Fees.** The charge for each person in a double room for the academic year 1978-79 is \$622 in Trent Drive Hall. Single rooms are reserved for returning students.

For the academic year, 1978-1979, the residential fee for Town House Apartments is \$984 and \$1,225 for Duke Modular Homes. These fees are per person for the academic year on the basis of three students to an apartment. Utility charges are not included in these fees. Cost of the utilities, except water, will be shared by occupants in these apartments.

Housing fees will be adjusted upward for the 1979-1980 academic year. A \$50 deposit is required on all reservations.

Rates for Central Campus Apartments will be quoted to applying students upon request to the Manager of Apartments and Property. Refunds on housing fees will be made in accordance with the University's established schedules.

**Dining Facilities.** If a student eats all meals on the Duke University campuses, the cost of food for the calendar year will average approximately \$1,200 to \$1,450, depending on the individual. Prices are the same in each of the University-operated cash dining facilities. Medical students are also welcome as guests in the board plan facilities, where an economical fixed price is charged for an all-you-can-eat meal.

## Motor Vehicle Registration

Each motor vehicle operated on Duke University campuses by students enrolled in the School of Medicine must be registered at the Medical Center Traffic

Office, 314 Bell Building, within five days after operation on the campus begins, and thereafter must display the proper registration decal.

All students must pay an annual fee of \$20 for each four-wheeled motor vehicle and \$10 for each motorbike or motor scooter registered. Bicycles are registered free of charge at the Public Safety Department, 2010 Campus Drive.

To register a vehicle, the student must present a valid state registration for each vehicle registered and a valid state operator's license.

Parking, traffic, and safety regulations will be given each student at the time of registration of the vehicle(s). Students are expected to abide by these regulations.

## Financial Aid

The Duke University School of Medicine makes financial assistance available to accepted students who, due to economic circumstances, could not otherwise attend the University. The school recognizes, however, the responsibility of the individual and the family to provide funds to achieve the objective of a medical education. Thus, the school does not consider that parents have discharged the full financial obligation for the continuing education of their sons or daughters upon the latter's completion of the undergraduate degree.

Financial assistance is available in a combined form of scholarships and loans, and all awards are made on the basis of demonstrated need.

**Financial Assistance to Incoming Freshmen.** When the medical school applicant receives a letter of acceptance into Duke University School of Medicine, a financial aid application is included if the student has indicated an interest in assistance on the application for admission. The economic circumstances of the applicant have no bearing on whether the applicant is accepted into the Medical School.

The student requesting financial aid is expected to work during the summer preceding entrance into medical school and to save part of these earnings to defray a portion of the first-year expenses.

The student's need must be established before an award can be made. The Office of Financial Aid, therefore, requires the Duke University application for financial aid and computation from the GAPS FAS application. Copies of federal income tax returns and a financial aid transcript are required as part of the financial aid application.

Applications for aid received in the fall will be reviewed in December, and applicants will be informed of decisions in late December. Applications received after December will be processed as received.

The present financial aid package is based on a \$2,500 federal (or state) insured student loan and a \$2,500 school loan. Financial need in excess of \$5,000 comes from one-half school gift and one-half from school loan.

**Financial Assistance to Upperclassmen.** Annual reapplication is required of all scholarship and loan recipients. Upperclassmen seeking financial assistance for the first time should consult with the Coordinator of Financial Aid.

### Endowed Scholarships.

Germain Bernard Scholarship, established in 1959 by the B. C. Remedy Company.

Thomas C. Bost Scholarship, established in 1965 by a gift from Dr. Thomas C. Bost, supplemented by subsequent gifts.

James L. Clark Memorial Scholarship, established in 1965 by a gift from Mr. and Mrs. Marvin D. Clark and supplemented by gifts from other donors.

C. T. Council Scholarship, established in 1959 by the B. C. Remedy Company.



William F. Franck Memorial Scholarship, established in 1958 by gift from William F. Franck, Jr. '39, and supplemented by additional gifts.

H. B. and Adelaide F. Ingle Medical Scholarship, established in 1976 by gift from Mr. and Mrs. Harry B. Ingle.

B. Everett Jordan Scholarship, established in 1974 by the late Senator B. Everett Jordan and his widow, Katherine Jordan.

Dr. John Haden Lane Memorial Scholarship, established in 1968 by gift from Edward H. Lane Foundation.

James Cecil McGehee Memorial Medical Scholarship, established in 1975 by gift from C. G. McGehee, Jr.

Medical Alumni Scholarship, established in 1974 by Duke Medical Alumni.

Medical School Faculty Wives Scholarship, established in 1968 by a gift from the Medical School faculty wives whose source of funds is proceeds from the Nearly New Shoppe.

Physical Medicine Scholarship, established in 1963 by gift from Central Carolina Convalescent Hospital, Inc., Greensboro, North Carolina.

Melvin D. and Judith H. Small Medical School Scholarship Fund was established in 1976 by gift from Dr. Melvin D. and Mrs. Judith N. Small.

Sigmund Sternberger Endowment Fund, established 1978 by gift from the Sigmund Sternberger Foundation, Inc., Greensboro, North Carolina.

Francis and Elizabeth Swett Scholarship, established in 1966 by gift from the late Dr. and Mrs. Swett.

Dr. Hillory M. Wilder Memorial Scholarship, established in 1962 by bequest from Celeste Wilder Blake and Kenneth M. Blake.

Sue Eggleston Woodward Memorial Scholarship, established in 1966 by gifts from parents, relatives, and friends.

**Other Medical School Scholarships.** Avalon Scholarships, Virginia H. Baxter Memorial Scholarship, Mary Duke Biddle Scholarships, Duke Hospital Medical Auxiliary Scholarships, Duke University School of Medicine Scholarships, State of North Carolina (tuition remission up to \$2,000), Slane Family Scholarship, and Sigmund Sternberger Scholarships.

**Federal Scholarships.** The National Health Service Corps and Armed Forces (Army, Navy, and Air Force) Scholarship programs are available for accepted or enrolled students. The recipient receives full tuition, fees, and living allowance in return for a commitment of service as a physician for each year of funding. The special application is made directly to the program in which the student is interested.

**First-Year Scholarships for Students of Exceptional Financial Need.** This federally funded program pays tuition, fees, and living expense. The student must have zero family resources as measured by a nationally recognized needs analysis. Recipients are selected by the school using federal criteria. For 1978-79, there were two scholarships.

**North Carolina Board of Governors Medical Scholarships (BGMS).** Each year fifteen Board of Governors Medical Scholars are chosen from among forty qualified first year medical school candidates who have been accepted for admission at one of the four medical schools located in North Carolina. BGMS recipients are selected by a statewide selection committee from candidates of all races who are financially disadvantaged state residents and who have expressed a medical interest and emphasis in practicing medicine in the State of North Carolina. BGMS awards provide a stipend of \$4,000 a year plus tuition and mandatory fees. They are renewable under certain conditions. Information about the BGMS program is available at the financial aid office.

# Loans

University loans are available under the specific restrictions of the loan funds and are awarded on the basis of financial need. Some of them are: W. K. Kellogg Foundation Loan Fund, Seaborn L. Hardman Loan Fund, Medical Freshman Tuition Loan, Scott Loan Fund, Charles W. Banner Loan Fund, Robert Wood Johnson Foundation Student Aid Program, and U.S. Health Professions loans.

The Frances and Elizabeth Swett Loan Fund is an emergency loan available in small amounts to any medical student on a no-interest basis for a short period of time.

Federally Insured Student Loans are available to full-time financially needy students at Duke University (an approved lender) if the student is unable to locate a home-town lender.

## Loans from Outside the University

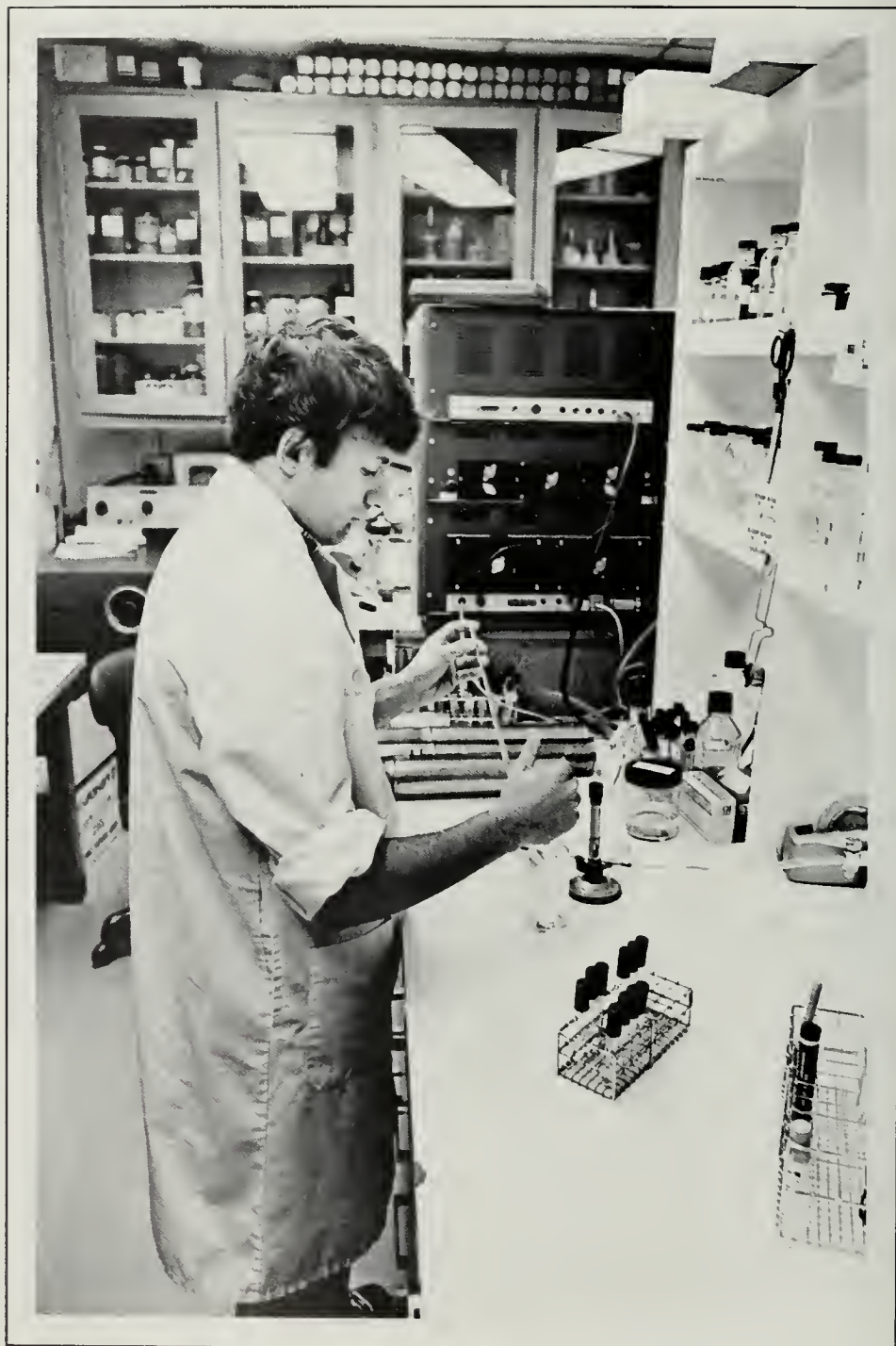
**North Carolina Educational Loan Program.** The North Carolina Department of Human Resources administers the Educational Loan Program for domiciliaries of North Carolina pursuing training in certain health professions who agree to practice their specialties as qualified professionals in underserved areas or programs of the state. Factors considered in awarding loans: ability to complete a training program, motivation to fulfill program goals, financial resources available to the applicant from other sources, and ability to meet domiciliary requirements. For medical students the loan is \$6,000 per year; loans are renewable depending on length of curriculum; and recipients agree to cancel their obligations by practice in shortage areas or programs of North Carolina. A personal interview is required only with the initial application and must be scheduled in December or January prior to the fall or summer for which funds are needed. For further information contact the Educational Loan Program, P.O. Box 12200, Raleigh, North Carolina 27605, (919) 733-2164.

American Medical Association/Education and Research Foundation insured loans, Health Education Assistance Loans, and Robert Wood Johnson insured loans are available to enrolled students. There is an annual maximum for each of these sources. Interest is higher than other need-based loans and is payable annually until repayment of principal begins. A special application is required for each loan.

Federally or State Insured (Guaranteed) Student Loans are available from many home-town banks. The annual maximum is \$5,000 with an aggregate maximum of \$15,000. Parental financial information may not be required and the bank may have an annual maximum less than the above figure. The 7 percent interest does not apply until repayment nine to twelve months after graduation.

Additional information, including a financial aid brochure and approved student budgets may be obtained by writing Nell Andrews, Coordinator of Financial Aid, Duke University Medical Center, Durham, North Carolina 27710.

# Courses of Instruction



## Anatomy

Professor: J. David Robertson, M.D. (Harvard, 1945), Ph.D. (Massachusetts Inst. of Tech., 1952), *Chairman*.

Professors: Sheila J. Counce, Ph.D. (Edinburgh, 1954); Montrose J. Moses, Ph.D. (Columbia, 1949); Elwyn Simons, Ph.D. (Princeton, 1956, Oxford, 1959).

Associate Professors: Matthew Cartmill, Ph.D. (Chicago, 1970); Kenneth L. Duke, Ph.D. (Duke, 1940); Harold P. Erickson, Ph.D. (Johns Hopkins, 1968); William C. Hall, Ph.D. (Duke, 1967); William L. Hylander, D.D.S., (Illinois, 1963), Ph.D. (Chicago, 1972); Richard F. Kay, Ph.D. (Yale, 1973); William Longley, Ph.D. (London, 1963); Michael K. Reedy, M.D. (Washington, 1962).

Assistant Professors: Mark R. Adelman, Ph.D. (Chicago, 1969); Frank H. Bassett III, M.D. (Louisville, 1957); Nell B. Cant, Ph.D. (Michigan, 1973); Joseph M. Corless, M.D., Ph.D. (Duke, 1972); M. Joseph Costello, Ph.D. (Duke, 1971); Emma R. Jakoi, Ph.D. (Duke, 1973); Richard B. Marchase, Ph.D. (Johns Hopkins, 1976); Thomas J. McIntosh, Ph.D. (Carnegie-Mellon, 1973); Frederick H. Schachat, Ph.D. (Stanford, 1974); Timothy L. Strickler, Ph.D. (Chicago, 1973); E. Lee Tyrey, Ph.D. (Illinois, 1969).

Assistant Medical Research Professor: Hie Ping Beall, Ph.D. (Tulane, 1967).

Associates: Arthur C. Chandler, Jr., M.D. (Duke, 1959); Jane S. Richardson, M.A. (Harvard, 1966).

Lecturer: Irving T. Diamond, Ph.D. (Chicago, 1953).

Senior Research Associate: Juan A. Vergara, M.D.

Research Associates: Terry Ashley, Ph.D.; Janet A. Hall, M.S.; Andrew Hamilton, Ph.D.; David N. Jacobson, Ph.D.; Alan Magid, Ph.D.; Mary C. Reedy, M.S.; Guido A. Zampighi, D.D.S.

## Required Courses

During Term 1, first-year students are required to take Gross Anatomy (ANA-200), Microanatomy (ANA-201), and Neuroanatomy (ANA-202). All instruction is designed to be informal and individualized. The general principles and functional viewpoint of living anatomy are emphasized and, whenever possible, fresh tissues and living cells are used.

**ANA-200. Gross Anatomy.** Students dissect the entire human body except the brain. Formal classroom lectures relate structures of the human body to their developmental and phylogenetic antecedents and the clinical significance of anatomical facts. Informal lectures are presented to small groups. Filmed lectures and prosections are available to students for laboratory and library study.

**ANA-201. Microanatomy.** Students are introduced to the histology, cytology, and cell biology of the major tissues of the human body. This will include an introduction to light and electron microscopy. X-ray diffraction and polarization optics as applied to structural organization in various tissues and organs. Biochem-

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\*An asterisk placed after the course number indicates that the course is also offered in the Graduate School.



ical, biophysical, and genetic cytology, as well as muscle and membrane structure, will be presented in detail.

**ANA-202. Neuroanatomy.** Neuroanatomy and neurophysiology are taught concurrently to correlate these fields. Patients will be presented by faculty members in clinical neurology and neurosurgery. The major portion of the course is organized by systems, e.g., sensory, visual, auditory, olfactory, and motor including cerebellar, autonomic, hypothalamic, and limbic mechanisms.

## Electives

**ANA-206(B). Anatomy of Back and Extremities.** Complete dissection of back and extremities, including pectoral and pelvic girdles. Visual aids will be used extensively. Course planned for orthopaedics, general practice, or neurosurgery. Terms: 3 or Summer Term I. Weight: 3. *Bassett and staff*

**ANA-208(B).<sup>\*</sup> Anatomy of the Trunk.** Emphasis will be on the anatomy of the thoracic, abdominal and pelvic organs, including relationships, blood supply and innervations, and, where practical, developmental and microscopic anatomy. The dissections will be supplemented with audiovisual presentations and discussions and with such prosections as are available. Term: 3. Weight: 2. *Duke*

**ANA-214(B).<sup>\*</sup> Anatomy of the Head and Neck.** This course is designed to be a review of the head and neck, emphasizing its phylogenetic and ontogenetic development along with clinically important features of the anatomy of this region. Term: 3. Weight: 2. *Strickler*

**ANA-215(B).<sup>\*</sup> Contractile Processes.** Cellular and molecular bases of activity in cilia and skeletal, cardiac and smooth muscle; submicroscopic structure and behavior of muscle; electrical and ionic properties of muscle membranes; the problem of electro-mechanical coupling; mechanics and thermodynamics of muscular contraction; biochemical energetics of contraction; modern methods and problems in contractility research. Also listed as PHS-216(B).<sup>\*</sup> Terms: 1 and 2. Weight: 3. *Reedy, Jobsis, Johnson, and Anderson*

**ANA-217(B).<sup>\*</sup> Structure and Function of Visual Photoreceptors.** A detailed study of available structural, biochemical, spectroscopic, and physiological data from retinal photoreceptors. Emphasis on molecular structure of vertebrate photoreceptor membranes, effects of bleaching on rhodopsin molecules, and initiation of neural information after photon absorption. Format to combine lectures, seminars, and demonstrations. Terms: 1 and 2. Weight: 3. *Corless and Yamanashi*

**ANA-224(B). Tutorial in Gross Anatomy.** A detailed review of selected regions of the human body in the context of the core gross anatomy sequence. Student will plan, with staff, prosections, special presentations, etc. Students will elect to study one or more selected region in consultation with the staff. Terms: 1 and/or 2. Weight: 1-5. *Strickler and staff*

**ANA-260(B). Developmental Systemic Anatomy.** A survey of all major systems or concentration on selected ones will be presented, depending on interests of students. Dated rat embryos, supplemented by primate material, will be used to follow the development of organ systems. Term: 3. Weight: 3. *Duke*

**ANA-280(B).<sup>\*</sup> Structure and Assembly of Macromolecules.** Lectures and conferences on the structure of biological macromolecules and on the mechanisms of assembly of organized macromolecular aggregates such as are found in cellular organelles and viruses. Emphasis on the results of electron microscopy, X-ray

diffraction, and optical analysis. (Spring 1977, and alternate years thereafter.) Terms: 3 and 4. Weight: 3. *Longley and Erickson*

**ANA-286(B).\*** **The Light Microscope, the Electron Microscope, and X-ray Diffraction in Biology.** Lectures and laboratories on methods of ultrastructure research. Fundamentals of optics; the light microscope, phase, polarizing, and interference microscopy. Basics of electron microscopy, staining, sectioning, and replication techniques. Optical and computer image processing. Introduction to X-ray diffraction theory and apparatus in structure determination. Terms: 3 and 4. Weight: 4. *Longley, Erickson, and Reedy*

**ANA-340(B).\*** **Tutorial in Advanced Anatomy.** Selected topics will be chosen for intensive reading and discussion. Topics may be chosen related to basic problems of cytology, growth and development, biophysics, endocrinological control, neuroanatomy, physiological differentiation and evolutionary origins of functional microsystems. Every term. Weight: 1-3 per term. *Anatomy faculty*

**ANA-354(B).\*** **Research Techniques in Anatomy.** A preceptorial course in various research methods in anatomy. An interested student might engage in research in physical anthropology, molecular and cell biology, developmental biology, fetal physiology, or stereotactic approaches to neuroendocrinology and neuroanatomy. Recent advances in methodology are stressed. Approval of the student by the faculty is required. Every term. Weight: 4-8. *Anatomy faculty*

**ANA-390(B).** **Anatomy of the Fetus.** The chief objective will be to complete a dissection of the human fetus. Emphasis will be placed on comparing fetal and adult anatomical systems and relationships. Term: 4. Weight: 2. *Duke*

**ANA-411(B).\*** **Molecular and Cellular Bases of Development and Differentiation.** Emphasis is placed on the biochemistry of the cell surface as the basis of cell recognition, control of cell cycle, and overall tissue organization. An analysis of protein nucleic acid interactions in chromosome structure and function are considered in light of newer concepts of transcriptional and translational control. Studies also include nuclear cytoplasmic interactions as well as hormone induction of differentiation and development. The course is designed to study the phenomena of development and differentiation and has been organized on a multidisciplinary level. The course is part of the lecture series of the development and differentiation study program, DDS-201(B). Terms: 1-2. Weight: 3 and 4. *McCarty, Counce, Kaufman, and Padilla*

**ANA-414(B).** **The Human Embryo.** The first eight weeks of development are considered in detail, including fertilization, implantation, formation, and function of embryonic membranes and placenta, and establishment of major organ systems. Emphasis is placed on distinctive features of human embryogenesis, and on causes, identification, and treatment of congenital defects. Term: 3. Weight: 2. *Counce*

**ANA-418(B).\*** **Reproductive Biology.** An indepth study of male and female reproductive processes including neuroendocrine, pituitary, and gonadal control mechanisms as well as the physiology of pregnancy and parturition. The basic lecture material in each section of the course is followed by seminar presentations by students and guest clinical faculty with emphasis on the interface between basic and clinical aspects. Also listed as PHS-418(B). Terms: 3 and 4. Weight: 2. *Anderson, Schomberg, and Tyrey*

## Anesthesiology

Professor: Merel H. Harmel, M.D. (Johns Hopkins, 1943) *Chairman.*

Professors: Peter B. Bennett, Ph.D. (Southampton, England, 1964); Philip R. Bromage, M.B., B.S. (London Univ., 1944); David A. Davis, M.D. (Vanderbilt, 1941); Sara J. Dent, M.D. (Med. Coll. of South

Carolina, 1945); Kenneth D. Hall, M.D. (Duke, 1953); Joannes H. Karis, M.D. (State Univ. of Utrecht, Holland, 1952); Lloyd F. Redick M.D. (Ohio State, 1958); Bruno J. Urban, M.D. (Albertus Magnus, Germany, 1960); Vartan Vartanian, M.D. (Clug Univ. Med. School, Rumania, 1951); Stanley W. Weitzner, M.D. (New York Coll. of Med., 1953).

Associate Professors: Elisabeth J. Fox, M.B., B.S. (London Univ., 1955); William J. Murray, Ph.D. (Wisconsin, 1959), M.D. (North Carolina at Chapel Hill, 1962); Ingeborg H. Talton, M.D. (Frankfurt/Main, 1951), Ph.D. (Geissen, 1952).

Associate Clinical Professors: M. Bourgeois-Gavardin, M.D. (Univ. of Paris, 1954; Duke, 1955); Charles F. Lanning, M.D. (Kansas, 1969).

Assistant Professors: Edmond C. Bloch, M.B., Ch.B. (Univ. of Capetown, South Africa, 1946); Enrico Camporesi, M.D. (Univ. Of Milan, Italy, 1970); Charles M. Christian II, Ph.D., M.D. (Louisiana, 1971, 1975); Lennart Fagraeus, M.D. (Karolinski Institute, Sweden, 1965); Ann Groce, M.D. (North Carolina at Chapel Hill, 1972); Radaslav Kosanin, M.D. (Univ. of Beograd, Yugoslavia, 1965); Philip D. Lumb, M.B., B.S. (Univ. of London, 1974); Mohammad Maroof, M.B., B.S. (Liaquat, Med. Coll., Pakistan, 1964); John N. Miller, M.D. (Univ. of Sydney, 1963).

Assistant Medical Research Professors: Charles E. Johnson, Ph.D. (Duke, 1975); James L. Parmentier, Ph.D. (California at Santa Barbara, 1972); Brij B. Shrivastav, Ph.D. (Univ. of Western Ontario, 1968); Sidney A. Simon, Ph.D., (Northwestern, 1973); Richard Vann, Ph.D. (Duke, 1976).

Adjunct Assistant Professor: Fritz F. Klein, Ph.D. (Duke, 1973).

Assistant Clinical Professors: Patrick J. Breen, M.B., B.S. (Royal Coll. of Surgeons, Ireland, 1959); J. Howard J. Brown, M.D. (Boston, 1967); Luther C. Hollandsworth, M.D. (Bowman Gray, 1951); John A. Jarrell, Jr., M.D. (Johns Hopkins, 1949); Stanley J. Rosenberg, M.D. (Michigan, 1968).

Associates: Carlos U. Arancibia, M.D. (Univ. of Chile, 1969); Donald A. Munday, M.D. (Univ. of Alberta, 1967).

Research Associate: Larry W. Burton, Ph.D. (Duke, 1977).

## Electives

**ANE-250(C). Clinical Acute Respiratory Physiology.** Work in Anesthesiology Blood Gas Laboratory learning theory and practice of oxygen electrode, carbon dioxide electrode and pH meter and ancillary techniques, and in Recovery Room and Acute Care Unit. Study of ventilator problems. Terms: 1, 2, and Summer Term I. Weight: 2. *Hall and staff*

**ANE-252(C). Clinical Anesthesiology II.** Introduction to theory and practice of cardiopulmonary resuscitation, diagnostic and therapeutic nerve blocks, and clinical surgical anesthesia. Students will review physiology and pharmacology of anesthesia and perform general and regional anesthesia and will assist in postanesthetic respiratory care. Every term. Weight: 2-8. *Harmel and staff*

**ANE-253(C). Anesthesiology Research.** In collaboration with the faculty, the student will work on a research project related to the physiology and pharmacology of anesthetics in a laboratory or clinical setting. Every term. Weight: 8. *Bennett and staff*

## Biochemistry

James B. Duke Professor Robert L. Hill, Ph.D. (Kansas, 1954), *Chairman*.

Professors: Professor Emeritus Mary L. C. Bernheim, Ph.D., (Cambridge, England, 1928); James B. Duke Professor Irwin Fridovich, Ph.D. (Duke, 1955); Samson R. Gross, Ph.D. (Columbia, 1953); Walter R. Guild, Ph.D. (Yale, 1951); James B. Duke Professor Philip Handler,\* Ph.D. (Illinois, 1939); Jerome S. Harris, M.D. (Harvard, 1933); Henry Kamin, Ph.D. (Duke, 1948); Norman Kirshner, Ph.D. (Pennsylvania State, 1952); Kenneth S. McCarty, Ph.D. (Columbia, 1957); K. V. Rajagopalan, Ph.D. (Univ. of Madras, 1957); James B. Duke Professor Charles Tanford, Ph.D. (Princeton, 1947); Robert Webster, Ph.D. (Duke, 1965).

Associate Professors: Robert M. Bell, Ph.D. (California, 1970); Ronald C. Greene, Ph.D. (California Inst. of Tech., 1954); Bernard Kaufman, Ph.D. (Indiana, 1961); Sung-Hou Kim, Ph.D. (Pittsburgh, 1966); William S. Lynn, Jr., M.D. (Columbia, 1946); Jacqueline A. Reynolds, Ph.D. (Washington Univ., 1963); David C. Richardson, Ph.D. (Massachusetts Inst. of Tech., 1967); Harvey J.

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\*On leave of absence.



Sage, Ph.D. (Yale, 1958); Lewis Siegel, Ph.D. (Johns Hopkins, 1965); J. Bolling Sullivan, Ph.D. (Texas, 1966).

Assistant Professors: Arno L. Greenleaf, Ph.D. (Harvard, 1974); Robert L. Habig, Ph.D. (Purdue, 1966); Michael Hirschfield, M.D. (Pennsylvania, 1967); Edward Holmes, M.D. (Pennsylvania, 1967); Nicholas Kredich, M.D. (Michigan, 1962); Robert Lefkowitz, M.D. (Columbia, 1966); Patrick A. McKee, M.D. (Oklahoma, 1962); Paul Modrich, Ph.D. (Stanford, 1973). Salvatore V. Pizzo, M.D., Ph.D. (Duke, 1973); Deborah A. Steege, Ph.D. (Yale, 1974); Allen David Roses, M.D. (Pennsylvania, 1967); Robert W. Wheat, Ph.D. (Washington, 1955).

Assistant Medical Research Professor: Celia Bonaventura, Ph.D. (Texas, 1968); Joseph Bonaventura, Ph.D. (Texas, 1968); Marc G. Caron, Ph.D. (Florida, 1973).

Adjunct Assistant Professor: Per-Otto Hagen, F.H.W.C. (Watt Univ. Scotland, 1961).

Associates: John Bittikofer, Ph.D. (Purdue, 1971); Yasuhiko Nozaki, Ph.D. (Univ. of Tokyo, 1945).

Research Associates: Charles J. Alden, Ph.D.; Thomas Andersen, Ph.D.; Nancy C. Amy, Ph.D.; Lawrence Ballas, Ph.D.; Edward Baptist, Ph.D.; Michael J. Barber, Ph.D.; Karl Beem, Ph.D.; Diane Y. Bell, Ph.D.; Sambhunath Bhattacharya, Ph.D.; Donald Bowden, Ph.D.; Nico Cerletti, Ph.D.; Kenneth Dean, Ph.D.; William Dean, Ph.D.; Kurt Drickamer, Ph.D.; Michael D. Erisman, Ph.D.; Bruce Freeman, Ph.D.; Larry Fretto, Ph.D.; J. William Freytag, Ph.D.; Lowrie Glasgow, M.D.; Earl Guthrow, M.D.; Peter Hardwick, Ph.D.; H. Moustafa Hassan, Ph.D.; Stephen R. Holbrook, Ph.D.; Jean Johnson, Ph.D.; John D. Lambeth, Ph.D.; Jack Lancaster, Ph.D.; Timothy Larson, Ph.D.; Carson R. Loomis, Ph.D.; John Salerno, Ph.D.; David Seybert, Ph.D.; Whanchul Shin, Ph.D.; William N. Southerland, Ph.D.; Robert M. Watt, Ph.D.; William Waud, Ph.D.; Dennis Winge, Ph.D.

## Required Courses

BCH-200—the core course given to all freshman medical students during a period of eighteen weeks in the first term—emphasizes the relationship between structure and function of the major classes of macromolecules in living systems including proteins, carbohydrates, lipids, and nucleic acids. The metabolic inter-relationships and control mechanisms are discussed as well as the biochemical basis of human diseases.

BCH-204—the required course in genetics for all first-year students—is given during fourteen weeks of the first term. The course emphasizes fundamental properties of the gene in relation to mutation, recombination, selection, replication, transcription, and translation, as well as the organization and structure of chromosomes. Human and medical genetics are emphasized to provide basic concepts necessary for understanding the origin and consequences of genetic variability. Approximately two-thirds of the lectures illustrate basic genetic problems.

With the staff's approval, some students with extensive formal training in genetics may be given the option of presenting a paper instead of taking examinations.

## Electives

**BCH-216(B). \* Molecular Genetics.** Genetic mechanisms and their relationship to nucleic acids and their synthesis. (Listed also in the *Graduate School Bulletin* as Genetics 216). Terms: 3 and 4. Weight: 4. *Guild and others of the University Program in Genetics*

**BCH-222(B). \* The Structure of Biological Macromolecules.** Introduction to the techniques of structure determination by X-ray crystallography and study of some macromolecules whose three-dimensional structures have been determined at high resolution. Terms: 3 and 4. Weight: 2. *Richardson and Kim*

**BCH-234(B). Metabolic-Genetic Disease Seminar.** Diseases of metabolism studied in detail with an emphasis on human genetics and inborn errors of metabolism. Format includes staff lectures, student seminars, patient presentations, textbook and literature reading. The group will be small enough to permit maximal personal interaction, particularly between students and faculty. Term: 3. Weight: 3. *Kredich, Gross, Hill, and Holmes*



**BCH-276(B).\*** **Comparative and Evolutionary Biochemistry.** Lectures and discussion of the origin of life, evolution of the genetic code, mutation and protein polymorphism, natural selection and protein structure, and comparison of homologous proteins and nucleic acids. Laboratory work involves the purification and characterization of homologous proteins from fish and invertebrates. Techniques used include salt fractionation, electrophoresis, ion-exchange and molecular exclusion chromatography, fingerprinting, molecular weight determination, amino acid composition, and other related approaches. Terms: June-July; Summer Term II. Weight: 6 per 5 weeks. *Sullivan*

**BCH-282(B).\*** **Experimental Genetics.** A series of laboratory exercises and discussions on the molecular mechanisms of mutation, recombination, replication, transcription, and translation of the genetic material. Terms: 3 and 4. Weight: 2. *Webster and others of the University Program*

**BCH-286(B).\*** **Current Topics in Immunochemistry.** This course deals with the structure-function specificity of antibodies. Immunogenicity and tolerance are discussed, with special emphasis on current theories of the diversity and synthesis of antibody molecules. Terms: 3 and 4. Weight: 2. *Sage*

**BCH-288(B).\*** **The Carbohydrates and Lipids of Biological Systems.** The subjects will be considered in the following two general categories: (1) The relationship between structure and function; particularly, (a) cell surface carbohydrates as antigenic determinants and their relationship to viral and carcinogen transformation, (b) connective tissue mucopolysaccharides, (c) structural features of lipids and phase transitions. (2) Biosynthesis and catabolism. Terms: 3 and 4. Weight: 2. *Kaufman*

**BCH-291(B).\*** **Physical Biochemistry.** Principles of thermodynamics, hydrodynamics, spectroscopy, and X-ray diffraction and scattering are applied to biological systems. Biological molecules and macromolecules in both soluble and crystalline states are discussed. Terms: 1 and 2. Weight: 3. *Tanford, Reynolds, and Richardson*

**BCH-292(B).\*** **Proteins and Enzymes.** Topics in protein chemistry including purification techniques, determination of primary structure, group specific modification and structure-function correlations. Mechanisms of action of enzymes, including the chemistry of non-protein cofactors. Terms: 3 and 4. Weight: 4. *Fridovich, Rajagopalan, and Richardson*

**BCH-296(B).\*** **Biological Oxidations.** A lecture, conference, and seminar course which deals with the mechanism of electron transport and energy conservation in a variety of oxidative enzymes. These mechanisms will be examined both in purified enzymes and in organized systems such as the mitochondrion, the endoplasmic reticulum, and the chloroplast. Terms: 3 and 4. Weight: 2. *Kamin, Fridovich, Rajagopalan, and Siegel*

**BCH-297(B).\*** **Intermediary Metabolism.** The synthesis and degradation of carbohydrates, lipids, nitrogenous compounds will be discussed in detail with emphasis on energy transformation and regulation of metabolic pathways. Terms: 1 and 2. Weight: 3. *Kirshner, Siegel, and Greene*

**BCH-299(B).\*** **Nutrition.** This course will examine the experimental basis for the identification and quantitation of requirements for calories, macronutrients, and micronutrients (vitamins and minerals). It will deal with the biochemistry of nutrition, with the assessment of nutriture, and with the biological effects of deficiency or excess of nutrients. This course will seek to define optimal nutriture and will search for the factual bases (if they exist) for commonly held beliefs on

the nutrition of individuals and populations. The course will consist of informal lectures and, if possible, student seminars. Term: 2. Weight: 2. *Kamin*

**BCH-351(B).\* Genetics Seminar.** Required of all students specializing in genetics. Terms: 1 and 2. Weight: 1. *Modrich and others of the University Program in Genetics*

**BCH-352(B).\* Genetics Seminar.** Required of all students specializing in genetics. Terms: 3 and 4. Weight: 1. *Modrich and others of the University Program in Genetics*

**BCH-355(B).\* Research in Genetics.** In a limited number of cases, a student will be permitted to participate in the research program of a faculty member. Acceptance is by individual arrangement with the proposed faculty preceptor. Terms: 1 and 2. Weight: 1-8 per term. *Biochemistry faculty*

**BCH-356(B).\* Research in Genetics.** In a limited number of cases, a student will be permitted to participate in the research program of a faculty member. Acceptance is by individual arrangement with the proposed faculty preceptor. Terms: 3 and 4, or Summer Term II. Weight: 1-8 per term. *Biochemistry faculty*

**BCH-357(B).\* Research in Biochemistry.** In a limited number of cases, a student will be permitted to participate in the research program of a faculty member. Acceptance is by individual arrangement with the proposed faculty preceptor. Terms: 1 and 2. Weight: 1-8 per term. *Biochemistry faculty*

**BCH-358(B).\* Research in Biochemistry.** In a limited number of cases, a student will be permitted to participate in the research program of a faculty member. Acceptance is by individual arrangement with the proposed faculty preceptor. Terms: 3 and 4, or Summer Term II. Weight: 1-8 per term. *Biochemistry faculty*

**BCH-360(B). Clinical Chemistry Laboratory.** Medical students may participate in the program of the Clinical Chemistry Laboratory on a tutorial basis. Students must receive the permission of the instructor. Terms: 1, 2, 3, or 4. Weight: 4. *Bittikofer*

**BCH-411(B).\* Molecular and Cellular Bases of Development and Differentiation.** Emphasis is placed on the biochemistry of the cell surface as the basis of cell recognition, control of cell cycle and overall tissue organization. An analysis of protein nucleic acid interactions in chromosome structure and function are considered in light of newer concepts of transcriptional and translational control. Studies also include nuclear cytoplasmic interactions as well as hormone induction of differentiation and development. The course is designed to study the phenomena of development and differentiation and has been organized on a multidisciplinary level. The course is part of the lecture series of the development and differentiation study program, DDS-201(B). Terms: 1 and 2. Weight: 3-4. *McCarty, Counce, Kaufman, and Padilla*

## Community and Family Medicine

Professor: E. Harvey Estes, Jr., M.D. (Emory, 1947); *Chairman*.

Assistant Professor: Robert J. Sullivan, Jr., M.D. (Cornell, 1966), M.P.H. (North Carolina at Chapel Hill, 1973); *Vice-Chairman*.

### DIVISION OF COMMUNITY HEALTH MODELS

Professor: Eva J. Salber, M.D. (Cape Town, South Africa, 1955); *Chief*.

Associate: Shirley E. Callahan, M.P.H. (North Carolina at Chapel Hill, 1958).

Research Associate: Cornelia B. Service, B.A. (Duke, 1953).

## DIVISION OF EDUCATION

Assistant Professor: Robert J. Sullivan, Jr., M.D. (Cornell, 1966), M.P.H. (North Carolina at Chapel Hill, 1973); *Chief*.

Professors: Thomas E. Frothingham, M.D. (Harvard, 1951); Clark C. Havighurst, J.D. (Northwestern, 1958); Siegfried H. Heyden, M.D. (Univ. of Berlin, Germany, 1951); Harmon L. Smith, Ph.D. (Duke, 1962).

Associate Professors: John K. Crellin, Ph.D. (Univ. of London, England, 1969); James F. Gifford, Jr., Ph.D. (Duke, 1969); Paul B. Ginsburg, Ph.D. (Harvard, 1971); William E. Hammond, Ph.D. (Duke, 1967).

Assistant Professors: Allen R. Dyer, M.D. (Duke, 1972); Carol C. Hogue, Ph.D. (North Carolina at Chapel Hill, 1974); Frederick R. Jelovsek, M.D. (Michigan, 1969); Diana E. McGrath, Ph.D. (Pennsylvania, 1974); Ramon Velez, M.D. (New York Univ., 1970); Ruby L. Wilson, Ed.D. (Duke, 1968).

Associates: Lynn C. Hartwig, M.A. (North Carolina at Chapel Hill, 1972); Josephine E. Newell, M.D. (Maryland, 1949); Robert A. Rosati, M.D. (Duke, 1967); Beverly K. Rosen, M.S.W. (North Carolina at Chapel Hill, 1974).

Assistant Medical Research Professor: Nancy R. Mendell, Ph.D. (North Carolina at Chapel Hill, 1972).

Research Associate: E. Edgar Cockrell III, M.S.P.H. (North Carolina at Chapel Hill, 1975).

## DIVISION OF EPIDEMIOLOGY AND BIOSTATISTICS

Assistant Professor: William E. Wilkinson, Ph.D. (North Carolina at Chapel Hill, 1968); *Chief*.  
Professor: Max A. Woodbury, Ph.D. (Michigan, 1948).

Assistant Professors: David C. Deubner, M.D. (Rochester, 1971); Daniel T. Gianturco, M.D. (Buffalo, 1960); Frank E. Harrell, Jr., Ph.D. (North Carolina at Chapel Hill, 1979); Kerry L. Lee, Ph.D. (North Carolina at Chapel Hill, 1974); Lawrence E. Myers, Ph.D. (California at Berkeley, 1972); Frederick J. Romm, M.D., M.P.H. (Harvard, 1970); Helen Hai-Ling Wang, M.B. (National Taiwan Univ., Taipei, Republic of China), M.P.H. (Harvard, 1976).

Assistant Medical Research Professors: William P. Cleveland, Ph.D. (Wisconsin, 1972); Kenneth G. Manton, Ph.D. (Duke, 1974).

Research Associates: Linda J. Camplong, B.A. (North Carolina at Greensboro, 1967); Michael Helms, B.S. (North Carolina at Chapel Hill, 1971); Lawrence H. Muhlbaier, M.S. (North Carolina at Chapel Hill, 1977).

## DIVISION OF FAMILY MEDICINE

Associate Professor: William J. Kane, M.D. (Temple, 1969); *Chief*.

Associate Professor: Samuel W. Warburton, Jr., M.D. (Pennsylvania, 1969).

Assistant Professors: James A. Bobula, Ph.D. (Ohio State, 1972); Stephen H. Gehlbach, M.D. (Western Reserve, 1968); Ann L. Moore, M.D. (Columbia, 1972); James T. Moore, M.D. (Columbia, 1971); Katherine A. Munning, Ph.D. (Iowa, 1979); George R. Parkerson, M.D. (Duke, 1953).

Associate: Randal D. France, M.D. (Texas, 1973).

Clinical Assistant Professors: Andrew L. Finn, D. Pharm. (Michigan, 1975); William J. Taylor, D. Pharm. (Tennessee, 1976).

Clinical Associates: Christina De La Torre, M.D. (Buenos Aires State University, Argentina, 1972); Stephen W. Friedman, M.D. (Tulane, 1971); Belinda R. Novik, Ph.D. (Michigan, 1972).

Clinical Instructor: Judith M. Roberts, M.S.N. (Vanderbilt, 1973).

## DIVISION OF HEALTH TEAMS DEVELOPMENT

Assistant Professor: Michael A. Hamilton, M.D. (Rochester, 1964); *Chief*.

Associate Professors: Arthur C. Christakos, M.D. (South Carolina, 1955); Thomas T. Thompson, M.D. (Virginia, 1964).

Assistant Professor: Malcolm Henderson Rourk, Jr., M.D. (Pennsylvania, 1963).

Associate: John J. McQueary, B.S. (North Carolina Central, 1973).

Instructors: Leaf R. Diamant, M.Ed. (North Carolina at Chapel Hill, 1973); Joyce Nichols, R.P.A. (Duke, 1970).

Adjunct Assistant Professor: Reginald D. Carter, Ph.D. (Bowman Gray, 1970).

Clinical Instructor: Joseph W. Kertesz, Jr., M.A. (Michigan, 1973).

Research Associate: Valerie Staples, R.P.A. (Bowman Gray, 1973).

## DIVISION OF UNIVERSITY HEALTH SERVICES

Assistant Professor: John P. Hansen, M.D. (Wisconsin, 1969); *Chief*.  
Assistant Professors: Albert D. Loro, Jr., Ph.D. (Washington Univ., 1976); Dorothy E. Naumann, M.D. (Syracuse, 1940); John B. Nowlin, M.D. (Duke, 1959).  
Associates: Albert E. Hathaway, M.D. (Hahnemann, 1945); Franz J. Herpok, M.B.A. (Cornell, 1974); Allen J. Lester, M.B., Ch.B. (Otago, New Zealand, 1970); Catherine M. Severns, R.N.P. (Yale, 1971); Gregory V. Solovieff, M.D. (Duke, 1973).  
Clinical Assistant Professors: Sigrid J. Neliuss, M.D. (Ludwig Maximilian, Germany, 1949); Woodhall Stopford, M.D. (Harvard, 1969).  
Clinical Associates: Mary C. Hilton, M.D. (Maryland, 1974); Richard G. Joslin, M.D. (Virginia, 1974).  
Research Associates: James M. Schmidt, B.H.S. (Duke, 1974); William T. Vaughan, B.S. (North Carolina at Chapel Hill, 1972).

### Adjunct Faculty

Adjunct Assistant Professors: James D. Bernstein, M.H.A. (Michigan, 1968); Thomas R. Hower-ton, A.B. (Duke, 1946), Durham, N.C.; Nancy R. Shaw, J.D. (Duke, 1973), Durham, N.C.  
Adjunct Associates: Barbara A. Duffer, M.Ed. (Indiana, 1975), Fayetteville, N.C.; Naomi Golding, M.S. (Columbia, 1970), Durham, N.C.; David P. Hunter, M.P.H. (Pittsburgh, 1970) Mount Holly, N.J., Richard L. Myers, M.H.A. (Duke, 1967), Durham, N.C.

### Clinical Faculty

Clinical Associate Professors: Barbara S. Hulka, M.D. (Columbia, 1959), M.P.H. (Columbia, 1961), Chapel Hill, N.C.; F.M. Simmons Patterson, M.D. (Pennsylvania, 1939), Greenville, N.C.  
Clinical Assistant Professors: Daniel H. Barco, M.D. (Duke, 1972), Durham, N.C.; Ellen T. Brubeck, M.D. (Ohio, 1975), Mount Olive, N.C.; Henry J. Carr, Jr., M.D. (Duke, 1954), Clinton, N.C.; Lawrence M. Cutchin, M.D. (North Carolina at Chapel Hill, 1962), Tarboro, N.C.; Julian M. Duttera, Jr., M.D. (Duke, 1968), La Grange, Ga.; Curtis J. Eshelman, M.D. (Michigan, 1971), Durham, N.C.; Seneca T. Ferry II, M.D. (Missouri, 1965), Sea Level, N.C.; Wilbur J. Harley, M.D. (Jefferson, 1950), Winston-Salem, N.C.; Lyndon K. Jordan, M.D. (Duke, 1961), Smithfield, N.C.; Hans J. Koek, M.D. (State University, Leyden, The Netherlands, 1956), Fayetteville, N.C.; Hervy B. Kornegay, Sr., M.D. (Bowman Gray, 1957), Mount Olive, N.C.; Robert S. Meyer, M.D. (Temple, 1974), Mount Olive, N.C.; Donald D. Neish, M.D. (Temple, 1958), Durham, N.C.; James G. Nuckolls, M.D. (Duke, 1966), Galax, Va.; Amos T. Pagter, Jr., M.D. (Duke, 1955), Tryon, N.C.; Jesse D. Samuels, M.D. (Duke, 1967), Fayetteville, N.C.; Evelyn D. Schmidt, M.D. (Duke, 1951), Durham, N.C.; Robert H. Shackelford, M.D. (Bowman Gray, 1947), Mount Olive, N.C.; Hal M. Stuart, M.D. (Bowman Gray, 1956), Elkin, N.C.; George R. Tucker, Jr., M.D. (North Carolina at Chapel Hill, 1955), Henderson, N.C.; W. Beverly Tucker, M.D. (North Carolina at Chapel Hill, 1966), Henderson, N.C.; Millard W. Wester, Jr., M.D. (Duke, 1952), Henderson, N.C.; Robert F. Willis, M.D. (Med. Coll. of Virginia, 1951), Fayetteville, N.C.  
Clinical Associates: Leandro C. Area, M.D. (Duke, 1975), Newton Grove, N.C.; James T. Best, M.D. (North Carolina at Chapel Hill, 1968), Sea Level, N.C.; Eawin B. Elliston, M.D. (Loma Linda, 1972), Asheville, N.C.; Terrence L. Goodman, M.D. (Cornell), 1974), Sea Level, N.C.; Daniel Gottovi, M.D. (Rochester, 1965), Wilmington, N.C.; Frank W. Leak, M.D. (North Carolina at Chapel Hill, 1967), Clinton, N.C.; James W. Mold, M.D. (Duke, 1974), Hillsborough, N.C.; John W. Nance, M.D. (Bowman Gray, 1948), Clinton, N.C.; Latham C. Peak, M.D. (Bowman Gray, 1951), Clinton, N.C.; John L. Rouse III, M.D. (Bowman Gray, 1973), Clinton, N.C.; Philip G. Singer, M.D. (Duke, 1975), Hillsborough, N.C.; John P. Stratton, M.D. (Harvard, 1961), Durham, N.C.

### Required Course

CFM-200—required as part of the Introduction to Clinical Medicine at the start of the second year—consists of lectures and discussions presented by faculty and guests to introduce students to family medicine and to the health care system. Patient care problems are emphasized in light of system structure, economic, sociological, and ethical characteristics. New techniques for improving access to and distribution of medical care are presented. Principles and methods of biostatistics and epidemiology are taught using illustrative material from the medical literature.



## Electives

**CFM-208(B).† Medical Uses of Computers.** An introductory course on applications of computers in clinical medicine. Special emphasis is given to various methods of collecting data from patients and making such data available for computer analysis. Working computer applications in several medical environments will be considered as examples, including visits to these units. The student will, in addition to the above, be taught the principles of computer programming through an exposure to a higher level computer language. Experience will include the writing of simple computer programs and hands on experience with computers and computer input and output devices. Terms: 1 and 2. Weight: 3. *Hammond*

**CFM-212(B). Organization and Management of Ambulatory Care Centers.** A series of seminars to discuss methods of organizing and managing ambulatory care centers. Material covered will be of interest to all students who will participate in the office setting and especially of interest to those who will operate primary care centers. Topics of discussion will include the conceptual basis for organizing ambulatory centers; objectives of centers including continuity, comprehensiveness, accessibility, accountability, and coordination of care; management tools such as monitoring and forecasting; principles of human relations; group vs. solo practice; and investment of resources. Students who elect the second term will apply the discussion material to a specific area of interest. Terms: 1-2. Weight: 1-2. *Mr. Herpok*

**CFM-215(B).† Biostatistics in the Medical Sciences.** Statistical principles and methods and their use in the health sciences, with particular emphasis on methods applicable to the design and analysis of epidemiologic studies. Topics covered include: point estimation, confidence intervals and tests of statistical significance for rates and ratios as measures of disease risk; life-table analysis; variable selection techniques; multivariate models for disease risk. Term: 2. Weight: 2. *Wilkinson and Myers*

**CFM-225(B).† Digital Computers and Their Application in the Health Sciences.** For students desiring an intensive exposure to medical computer applications. The flexible format of the course permits a variety of projects in computer medicine. Examples include projects in interactive patient interviewing; computer-aided instruction; patient/physician education; data collection, organization, retrieval, display, and analysis; and physician-assist programs. Every term. Weight: 1-8. *Hammond*

**CFM-226(B). Historical Studies in a Medical Specialty.** This elective is offered primarily to those who have made the choice of their probable career specialty. It is intended to provide an appreciation of the developments in that specialty and thereby deepen an understanding of it. While the choice of elective topic will be made on an individual basis and depend on the interests of each student, emphasis generally will be placed on specific theoretical, practical, and organizational developments since the second half of the nineteenth century. The format comprises selected readings, tutorials and student project. Terms: 1, 2, 3, or 4. Weight: 1 or 2. *Crellin, Gifford, and English*

**CFM-227(B).† Medicine in America.** The historical development of medical science, the medical profession, and patterns of medical care in the United States. Topics covered will include bases of authority for the practice of medicine, the standing of the physician in society, medical education, medical sects, the evolution of hospital care, medical organizations, and health care delivery systems.

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†For further information, contact the Associate Dean for Graduate Medical Education.

The history of the Duke University Medical Center provides a closing recapitulation of course themes. Additional units of credit may be earned through independent study. Terms: 2 or 4. Weight: 1. *Gifford and Crellin*

**CFM-229(B).† The Development of Modern Medicine.** Comprising lectures, discussion, and readings, this course outlines the general history of medicine, with particular attention given to developments since the seventeenth century. The course will include such topics as the contributions of William Harvey, aspects of clinical diagnosis, and the evolution of key concepts in modern medicine such as cell theory, the germ theory, anticepsis, and theories of immunity. Full use will be made of the excellent resources of the Trent Collections. Additional units of credit may be earned through independent study. Terms: 1 or 3. Weight: 1. *Gifford and Crellin*

**CFM-231(B).† Medical Care Insurance.** A seminar to cover the history of health insurance in the U.S. and selected European countries; compulsory versus voluntary insurance; advantages and disadvantages of major specific programs; interests of the consumer, the provider, and the insuring agency; attitudes and role of "organized medicine;" trends in health insurance (HMOs, PSROs, HSAs, etc.) Term: 4 or Summer Term II. Weight: 1. *Goldwater*

**CFM-233(B).† Occupational Medicine.** (Formerly Medicine and Industry). Student participation in projects being conducted in the Division of Occupational Medicine. Background material will be presented covering history of occupational (industrial) medicine, labor legislation, workmen's compensation and the Occupational Safety and Health Act (OSHA) of 1970. Clinical and epidemiological aspects of occupational diseases will be included, with emphasis on industrial hygiene and toxicology. Organization and administration of employee health programs will also be considered, with visits to representative establishments as part of the experience. Typical projects include such matters as evaluation of chemical exposures in the work environment, reactions of humans to chemical stress, medical evaluation of suspected cases of occupational disease. Terms: 2, 3, 4, or Summer Term II. Weight: 6. *Goldwater and staff*

**CFM-238(B).† Tutorial in Community and Family Medicine.** An eight week, individually arranged experience in which the student participates in the research program of a faculty member. The subject matter, course weight, and meeting time will be arranged with the faculty member. Each student will meet regularly with the faculty preceptor and will carry out a project related to the preceptor's work. Through these discussions and project, the student will be able to develop an understanding of the discipline involved. Possible areas include management sciences, economic aspects of health care, computer technology, biostatistics, and epidemiology. Because of the variety of projects available and the necessity of prior arrangements, it is essential that interested students consult with the instructor or staff at least one month before the beginning of the term elected. Every term. Weight: 1-8 per term. *Estes and Staff*

**CFM-240(B).† Epidemiologic Principles and Methods.** Topics covered in this intensive course will include the study of the distribution of diseases in populations, issues in study design, data collection, and methods of analysis. Modules on the subjects of case-control, cohort, and cross-sectional studies, clinical trials, and intervention studies will be presented. Methods will be introduced for assessing and dealing with bias, misclassification, and confounding. Lectures will be supplemented by outside readings, seminars, and student presentations. Text: MacMahon and Pugh, *Epidemiology, Principles, and Methods* and Lilienfeld, *Foundation of Epidemiology*. Term: 2. Weight: 2. *Grufferman*

**CFM-242(B).† Nutrition Epidemiology.** Nutrition epidemiology may be defined as the study of the role of the nutrition factor in the *causal web* of illness patterns of human populations. The purpose of this course is to offer an opportunity for a systematic review of population approaches to nutrition studies. Currently, most nutrition courses offered are primarily concerned with studies using *in vitro* laboratory techniques, animal models, or individual human subjects, with minimal emphasis on human population groups in their natural environments. In the course, an emphasis will be placed on methods available for chronic disease epidemiologic research since most nutritional disorders in man are basically chronic. Particular attention will be directed to principles of research design and critical analyses of selected studies. It is hoped that at the completion of the course, the student will be prepared to design and conduct population-based studies of human nutrition. Terms: 3 and 4. Weight: 1-2. *Sue Y.S. Kimm*

**CFM-271(B). Computers in Medical Research.** This course is for students desiring to participate in the application of computers to mathematical models of disease diagnosis and intervention. Examples cover principles of experimental design in sequential clinical trials. Students may supplement this course with additional research experience if they desire. Every term. Weight: 2. *Woodbury*

**CFM-219(C). Tutorial in Clinical Epidemiology.** Selected topics will be chosen for reading and discussion. Major emphasis is on cardio-cerebrovascular chronic-degenerative diseases, major neoplastic diseases, and industrial cancer screening. Terms: 3 or 4. Weight: 2. *Heyden*

**CFM-221(C). The Computer Textbook of Medicine.** Students will participate in the writing and updating of the computer textbook of medicine. Information contained in the initial chapter of ischemic heart disease will be used to assist in the management of patients on the cardiology service. Every term. Weight: 2 and 4. *Rosati and Starmer*

**CFM-239(C). Community and Family Medical Care Experience.** An experience will be arranged for each student under the supervision of competent physicians in their own clinics. In addition to delegated clinical responsibilities, a portion of the time will be spent in discussion of features which make that particular clinical environment similar to, or distinct from, other types of clinical experience. A wide variety of geographic locations and practice types are available. Among these are family practice clinics in Sanford, Smithfield, Mount Olive, Lansing; primary care internist clinics in Clinton and Macon, Georgia; a small hospital in Sea Level; and a neighborhood comprehensive care clinic in Durham. Because of the variety of available settings and the necessity for prior arrangements, it is essential that interested students contact the instructor or staff as soon as possible, and at least one month prior to the desired term. Stipends are available for certain sites. Every term. Weight: 4-9. *Sullivan and staff*

**CFM-241(C). Community Health Assessment.** A tutorial in which the first term discussion will focus on various methods of assessing the health needs of a population. Durham County will be the primary but not the sole model to be studied. In the second term tutorials will be of a practical nature and/or emphasize fieldwork. Students may attend meetings of the Board of the Capital Health Systems Agency (CHSA), the area health planning body for this region, and/or visit selected health departments or other agencies. Terms: 1 and 2. Weight: 1-3. *Salber*

**CFM-246(C). Bioethics.** Lectures, discussion, and readings in selected ethical questions raised by modern biomedical science and technology; including such topics as genetics and the "new biology," contraception, abortion, experimentation



consent, behavior control, scarce medical resources, dying, and death. Terms: 1 or 2. Weight: 1. *Harmon Smith*

**CFM-247(C). Philosophic Problems for Physicians.** This seminar brings the resources of philosophy, literature, poetry, psychology, and sociology to bear on specific ethical and philosophical problems with which practicing physicians deal. The course proceeds with didactic and seminar presentations focusing on both medical-legal controversies and ethical dilemmas in the day-to-day practice of medicine. The historical as well as psychological roots of medical ethics will be explored in light of conflicting philosophies of science and medicine. The following topics will be among those offered for consideration: (1) the doctor-patient relationship and models of medicine; (2) ethical codes and laws; (3) meaning of informed consent; (4) abortion, euthanasia, eugenics, and definitions of death; (5) behavior control, psychotherapy, and psychosurgery in a free society; (6) medical judgment and medical regulations; (7) hypochondriasis, patient responsibility, and the unwanted patient; (8) professional detachment and commitment; and (9) value considerations in specialty choice. Terms: 3 and 4. Weight: 2 or 4. *Dyer*

**CFM-249(C). Issues in Law and Medicine.** A seminar involving discussion of both practical law for the physician and how social issues affect law and medicine. Emphasis will be placed on those aspects of the law which will most likely directly affect the individual as a practicing physician, including the philosophy of law; the adversary system; the physician in court; the law of malpractice, human experimentation, abortion and sterilization; forensic pathology, and forensic psychiatry. In addition, attention will be given to ancillary issues such as licensure of physicians, paramedical personnel, and hospital regulation. Terms: 2 or 4. Weight: 2. *Shaw*

**CFM-255(C). University Health Services Clinic.** A clinical experience aimed at providing the student with experience in diagnosis and treatment of those common illnesses comprising 80–90 percent of problems seen in a primary care practice setting. The student will work under the direction and close supervision of faculty members in the University Health Services clinic, and will have an opportunity to work with other clinic team members, such as physician's associates and nurse practitioners. Every term. Weight: 8. *Hansen and staff*

**CFM-259(C). Clerkship in Family Medicine.** Students will manage patients in the ambulatory primary care setting of the Duke-Watts Family Medicine Center under supervision of faculty and resident family physicians. Emphasis is placed upon comprehensive, continuous, personal care for individuals and families. Opportunities are also available for participation in hospital management of family medicine patients at Durham County General Hospital. Terms: 1, 2, 3, 4. Weight: 8. *Kane, Parkerson, Ann Moore, Friedman*

**CFM-261(C). Family Medicine Continuity Experience.** Students will manage patients in the Family Medicine Center under supervision of faculty family physicians two half-days a week. Continuity of care is emphasized by providing comprehensive medical care to specific families over periods of four to eight months. Diagnostic coding and the problem-oriented record system are utilized. Terms: 1, 2, 3, 4. Weight: 4 or 8. *Parkerson, Kane, Ann Moore, Friedman, and La Torre*

**CFM-263(C). Relating to the Patient as a Family Doctor.** The doctor-patient and doctor-family relationship is studied in seminars and by use of video-playback interviews. Terms: 3 and 4. Weight: 2. *Jim Moore, Novik, and France*

**CFM-265(C). Issues in Health Care Delivery.** The purpose of this course is to provide medical students the opportunity to analyze certain areas in the delivery



of health care through seminars and related readings. Four topics have been designated and each will be coordinated by a principle instructor with expertise in that field. The topics are access to medical care; cost of medical care; quality of medical care; and the role of the consumer in medical care. Terms: 1 and 3. Weight: 2. *Estes and staff*

**CFM-267(C).† Team Training for Primary Health Care Delivery.** Student teams consisting of a medical, nursing, physician's associate, and health administration student will learn the team approach to the delivery of primary care in a team-oriented practice providing health care services in Parkwood, a suburban community near Durham. Medical students will be supervised by family physicians based in the clinic. Every term. Weight: 4-8. *Hamilton*

**CFM-269(C). Methods of Recording and Analyzing Clinical Data.** Methods of indexing patient problems are presented as a basis for research studies in medical care. Students will record problems of patients encountered on their clinical rotations and perform analyses on these data. Terms: 1 and 4. Weight: 1-4. *Parkerson, Sullivan, and Gehlbach*

## Medicine

Professor: James B. Wyngaarden, M.D. (Michigan, 1948); *Chairman.*

### DIVISION OF CARDIOLOGY

Professor: Andrew G. Wallace, M.D. (Duke, 1959); *Chief.*

Professors: Walter L. Floyd, M.D. (Johns Hopkins, 1954); Joseph C. Greenfield, M.D. (Emory, 1956); Robert J. Lefkowitz, M.D. (Columbia, 1966); James J. Morris, M.D. (State Univ. of New York, 1959); Eugene A. Stead, Jr., M.D. (Emory, 1932); Robert E. Whalen, M.D. (Cornell, 1956).

Associate Professors: Victor S. Behar, M.D. (Duke, 1961); Fred R. Cobb, M.D. (Mississippi, 1964); John J. Gallagher, M.D. (Georgetown, 1968); Joseph R. Kisslo, M.D. (Hahnemann, 1967); Yihong Kong, M.D. (Natl. Defense Med. Center, Taiwan, 1958); Robert H. Peter, M.D. (Duke, 1961); Robert A. Rosati, M.D. (Duke, 1967); C. Frank Starmer, Ph.D. (North Carolina at Chapel Hill, 1968); Harold C. Strauss, M.D. (McGill, 1964); Galen S. Wagner, M.D. (Duke, 1965).

Assistant Professors: John T. Baker, M.D. (Harvard, 1971); Barbara C. Newborg, M.D. (John Hopkins, 1949); Raymond E. Ideker, M.D. (Tennessee, 1974); Edward Pritchett, M.D. (Ohio, 1971); Olaf Von Ramm, Ph.D. (Duke, 1973); Ali Soroush, M.D. (Univ. of Isfahan, 1956); Robert Waugh, M.D. (Pennsylvania, 1966).

Associates: Edwin B. Cox, M.D. (Duke, 1971); Michael Hindman, M.D. (Illinois, 1973); Kenneth G. Morris, M.D. (Ohio, 1972); Nancy W. Stead, M.D. (Duke, 1969).

Assistant Medical Research Professors: Marc G. Caron, Ph.D. (Miami, 1973); Philip McHale, Ph.D. (Duke, 1972); Judith C. Rembert, Ph.D. (North Carolina at Chapel Hill, 1972); William M. Smith, Ph.D. (Duke, 1970); Thomas R. Snow, Ph.D. (Duke, 1971).

### DIVISION OF DERMATOLOGY

Professor: Gerald S. Lazarus, M.D. (George Washington, 1963); *Chief.*

Professors: J. Lamar Callaway, M.D. (Duke, 1932); Lowell A. Goldsmith, M.D. (State Univ. of New York, 1963); Sheldon R. Pinnell, M.D. (Yale, 1963).

Assistant Professors: Robert S. Gilgor, M.D. (Pennsylvania, 1962); Brian V. Jegasothy, M.D. (Univ. of Ceylon, 1966).

### DIVISION OF ENDOCRINOLOGY

Professor: Harold E. Lebovitz, M.D. (Duke, 1948); *Chief.*

Professor: Harry T. McPherson, M.D. (Duke, 1948).

Associate Professors: Jerome M. Feldman, M.D. (Northwestern, 1961); Charles Johnson, M.D. (Howard, 1963).

Assistant Professors: Marc K. Drezner, M.D. (Pittsburgh, 1970); Kenneth S. McCarty, M.D. (Duke, 1972).

Associates: B. Titus Allen, M.D. (Duke, 1966); Warner M. Burch, M.D. (Bowman Gray, 1971); Mark Feinglos, M.D. (McGill, 1973); David A. Hester, M.D. (Oklahoma, 1973).

## DIVISION OF GASTROENTEROLOGY

Professor: Malcolm P. Tyor, M.D. (Duke, 1946); *Chief*.

Associate Professors: Charles M. Mansbach, M.D. (New York Univ., 1963); Michael E. McLeod, M.D. (Duke, 1960); Steven H. Quarfordt, M.D. (New York Univ., 1960).

Assistant Professors: John T. Garbutt, M.D. (Temple, 1962); Jacqueline C. Hijmans, M.D. (Univ. of Leiden, 1951); Paul G. Killenberg, M.D. (Pennsylvania, 1963); Thomas T. Long, M.D. (Bowman Gray, 1966); James K. Roche, M.D. (Pennsylvania, 1969).

Associates: Lowrie R. Glasgow, M.D. (Virginia, 1969); Stuart F. Robinson, M.D. (Duke, 1973).

## DIVISION OF GENERAL MEDICINE

Professor: Patrick A. McKee, M.D. (Oklahoma, 1962); *Chief*.

Associate Professors: Frank Lecocq, M.D. (Illinois, 1954); Francis Neelon, M.D. (Harvard, 1962).

Assistant Professors: George J. Ellis, M.D. (Harvard, 1963); David B. Gilbert, M.D. (Colorado, 1965); Douglas G. Kelling, M.D. (Harvard, 1972); Ramon Velez, M.D. (New York Univ., 1970).

Associates: John R. Feussner, M.D. (Vermont, 1973); Eugene Linfors, M.D. (Duke, 1971).

## DIVISION OF HEMATOLOGY

Professor: Wendell F. Rosse, M.D. (Chicago, 1958); *Chief*.

Professors: John Laszlo, M.D. (Harvard, 1955); R. Wayne Rundles, M.D. (Duke, 1940); Harold R. Silberman, M.D. (Washington Univ., 1956).

Associate Professors: Harvey J. Cohen, M.D. (State Univ. of New York, 1965); Andrew T. Huang, M.D. (Taiwan, 1965); Gerald Logue, M.D. (Pittsburgh, 1966).

Assistant Professors: Judith C. Anderson, M.D. (Jefferson, 1969); Peter Tallos, M.D. (Univ. of Sydney, 1969); J. Brice Weinberg, M.D. (Arkansas, 1969).

Associates: William R. Berry, M.D. (Duke, 1973); Jeffrey Crawford, M.D. (Ohio, 1974); Joseph W. Fay, M.D. (Ohio, 1972); Russel Kaufman, M.D. (Ohio, 1973); Roger J. Kurlander, M.D. (Chicago, 1971); Joseph Moore, M.D. (Johns Hopkins, 1970); James E. Niedel, M.D. (Miami, 1973); Daniel C. Scullin, M.D. (Ohio, 1970).

Assistant Medical Research Professor: W. David Sedwick, Ph.D. (Pennsylvania, 1970).

Medical Research Associate: Emily Reisner, Ph.D. (Case Western Reserve, 1969).

## DIVISION OF INFECTIOUS DISEASE

Associate Professor: David T. Durack, M.D. (Oxford, 1973), *Chief*.

Associate Professor: John D. Hamilton, M.D. (Colorado, 1964).

Assistant Professors: Harry A. Gallis, M.D. (Duke, 1967); Robert J. Sullivan, Jr., M.D. (Cornell, 1966).

Associates: G. Ralph Corey, M.D. (Baylor, 1973); Conrad C. Fulkerson, M.D. (Missouri, 1969).

## DIVISION OF NEPHROLOGY

Professor: Roscoe R. Robinson, M.D. (Oklahoma, 1954); *Chief*.

Professors: James R. Clapp, M.D. (North Carolina at Chapel Hill, 1957); J. Caulie Gunnells, M.D. (South Carolina Med. Coll., 1956); C. Craig Tisher, M.D. (Washington Univ., 1961).

Associate Professors: Robert A. Gutman, M.D. (Florida, 1962); William E. Yarger, M.D. (Baylor, 1963).

Assistant Professors: Vincent W. Dennis, M.D. (Georgetown, 1966); Robert H. Harris, M.D. (Georgia, 1966); Richard M. Portwood, M.D. (Texas, 1954).

Associates: Peter C. Brazey, M.D. (Washington Univ., 1972); William W. Stead, M.D. (Duke, 1973).

## DIVISION OF NEUROLOGY

Associate Professor: Allen D. Roses, M.D. (Pennsylvania, 1967); *Chief*.

Professors: Albert Heyman, M.D. (Maryland, 1940); John B. Pfeiffer, Jr., M.D. (Cornell, 1942).

Associate Professors: James N. Davis, M.D. (Cornell, 1965); Ara Tourian, M.D. (Iowa, 1958).

Assistant Professors: Barrie J. Hurwitz, M.B. (Witwatersrand Univ., 1968); Michael Kaufman, M.D. (Duke, 1971); James O. McNamara, M.D. (Michigan, 1968); C. Warren Olanow, M.D. (Toronto, 1965); S. Clifford Schold, M.D. (Arizona, 1973).

Associates: Louis Giron, M.D. (Washington Univ., 1968); Geoffrey Hartwig, M.D. (Duke, 1972).

## DIVISION OF PULMONARY-ALLERGY

Professor: Herbert O. Sieker, M.D. (Washington Univ., 1948); *Chief*.

Professors: Charles E. Buckley, M.D. (Duke, 1954); Johannes A. Kylstra, M.D. (Univ. of Leiden, 1952); William S. Lynn, M.D. (Columbia, 1946); Herbert A. Saltzman, M.D. (Jefferson, 1952).

Assistant Professors: James D. Crapo, M.D. (Rochester, 1971); Stephen L. Young, M.D. (Univ. of California, 1968).

Associates: Henry A. Foscue, M.D. (Duke, 1968); Khalih Kariman, M.D. (Meshed, 1969).

## DIVISION OF RHEUMATIC AND GENETIC DISEASE

Associate Professor: Ralph Snyderman, M.D. (State Univ. of New York, Downstate Med. Ctr., 1965); *Chief*.

Professors: Grace P. Kerby, M.D. (Duke, 1946); James B. Wyngaarden, M.D. (Michigan, 1948).

Associate Professors: Edward W. Holmes, M.D. (Pennsylvania, 1967); Nicholas M. Kredich, M.D. (Michigan, 1962).

Assistant Professors: David S. Caldwell, M.D. (Bowman Gray, 1967); Michael S. Hershfield, M.D. (Pennsylvania, 1967); Peter F. Pepe, M.D. (Temple, 1966); David S. Pisetsky, M.D. (Albert Einstein, 1973); John R. Rice, M.D. (Miami, 1968).

## ADJUNCT FACULTY

Professors of Experimental Medicine: Pedro Cuatrecasas, M.D. (Washington, 1962); Gertrude B. Elion, D.Sc. (George Washington, 1969); George H. Hitchings, Ph.D. (Harvard, 1933); Robert A. Maxwell, Ph.D. (Princeton, 1954); Charles A. Nichol, Ph.D. (Wisconsin, 1949).

Associate Professors: David W. Barry, M.D. (Yale, 1969); Thomas Witbank, M.D. (Tufts, 1968).

Assistant Professors: Kuttikkat Chandrabose, Ph.D. (Cornell, 1970); Richard DiAugustine, Ph.D. (Tulane, 1968); Thomas E. Eling, Ph.D. (Alabama, 1968); Gary E. R. Hooks, Ph.D. (Victoria, 1968).

Associate of Experimental Medicine: Thomas O'Neil, Ph.D. (California, 1974).

## CLINICAL FACULTY

Clinical Professor: John R. Haserick, M.D. (Minnesota, 1941).

Associate Clinical Professor: Harold L. Godwin, M.D. (Harvard, 1947), Fayetteville, N.C.

Clinical Assistant Professors: Syed Ahmed, M.D. (Dow Med. Coll., 1967), Danville, Va.; Wayne D. Brenckman, M.D. (Yale, 1963) Research Triangle Park, N.C.; A. Derwin Cooper, M.D. (George Washington, 1932) Durham, N.C.; Walter E. Davis, M.D. (Duke, 1966), Durham, N.C.; Thomas R. Harris, M.D. (Tennessee, 1955), Shelby, N.C.; William E. Howiler, M.D. (Med. Univ. of South Carolina, 1970), Fayetteville, N.C.; John T. Joyner, M.D. (Bowman Gray, 1962) Asheville, N.C.; John C. Lumsden, B.S. (North Carolina State Univ. 1947), Raleigh, N.C.; Jesse Roberts, M.D. (Louisiana, 1961), Winston-Salem, N.C.; Charles W. Styron, M.D. (Duke, 1938), Raleigh, N.C.; Abe Walston, M.D. (Duke, 1963), Durham, N.C.; Khye Weng, M.D. (Univ. of Malaya, 1956), Durham, N.C.; Edward S. Williams, M.D. (North Carolina at Chapel Hill, 1954), Durham, N.C.

Clinical Associates: Sherwood W. Barefoot, M.D. (Duke, 1938), Greensboro, N.C.; Woodrow W. Batten, M.D. (Bowman Gray, 1944), Smithfield, N.C.; Robert B. Bomberg, M.D. (Colorado, 1964), Durham, N.C.; Robert A. Buchanan, M.D. (Bowman Gray, 1969), Durham, N.C.; John R. Bumgarner, M.D. (Med. Coll. of Virginia, 1939), Raleigh, N.C.; Calvert R. Busch, M.D. (Med. Coll. of Wisconsin, 1969), Asheville, N.C.; F. Farrell Collins, M.D. (Vermont, 1972) Pinehurst, N.C.; George W. Crane, M.D. (Northwestern, 1946), Durham, N.C.; Frank P. Dalton, M.D. (Duke, 1960), Durham, N.C.; Michael S. Entmacher, M.D. (Duke, 1968), Durham, N.C.; Walter C. Fitzgerald, M.D. (Virginia, 1943), Danville, Va.; Harvey E. Grode, M.D. (Duke, 1960), Durham, N.C.; John H. Hall, M.D. (Duke, 1964), Greensboro, N.C.; Michael A. Hamilton, M.D. (Rochester, 1964), Durham, N.C.; H. LeRoy Izlar, M.D. (Duke, 1948), Durham, N.C.; George E. Koury, M.D. (Tulane, 1944), Burlington, N.C.; Stanley Levy, M.D. (Georgetown, 1971), Durham, N.C.; Thomas D. Long, M.D. (Bowman Gray, 1952), Roxboro, N.C.; Emmett S. Lupton, M.D. (New York Univ., 1938), Greensboro, N.C.; John A. Lusk, M.D. (Alabama, 1951), Greensboro, N.C.; Isaac H. Manning, Jr., M.D. (Harvard, 1935), Durham, N.C.; Joseph P. McCracken, M.D. (Duke, 1938), Durham, N.C.; Edmond Miller, M.D. (Duke, 1956), Durham, N.C.; W. S. Miller, M.D. (North Carolina at Chapel Hill, 1961), Raleigh, N.C.; John A. Moore, M.D. (Med. Coll. of Virginia, 1948), Greensboro, N.C.; Henry T. Perkins, M.D. (Duke, 1957), Raleigh, N.C.; Wade G. Rhoades, M.D. (Bowman Gray, 1960), Goldsboro, N.C.; Jack G. Robbins, M.D. (Duke, 1948), Durham, N.C.; Richard J. Rosen, M.D. (George Washington, 1955), Greensboro, N.C.; Mehrdad M. Sahba, M.D. (Isfahan Faculty of Med., Iran, 1957), Durham, N.C.; William V. Singletary, M.D. (Duke, 1943), Durham, N.C.; Allen D. Smith, M.D. (Georgia, 1937), Durham, N.C.; John P. Stratton, M.D. (Harvard, 1961), Durham, N.C.; W. Harrison Turner, M.D. (Med. Coll. of Virginia, 1968), Durham, N.C.; William G. Wysor, M.D. (Virginia, 1950), Durham, N.C.



## Required Courses

The Department of Medicine traditionally has the responsibility of preparing students for a lifetime of learning as they give care to patients who ask them for help. The first step is to begin to think and act like a doctor.

MED-201—Introduction to Clinical Medicine—a course in the first year prepares the student to take an active role in patient care. The course is designed to introduce students to the methods involved in obtaining information about patients and their problems by means of accurate and complete history taking and performance of physical and laboratory examinations. Early in the course, students are taught the methods used in patient interviewing, the essentials of examination of various organ systems, and the techniques and meaning of the hematological and other laboratory examinations by means of introductory lectures and experience with patients on the ward and in the laboratory. Information obtained in the other first year courses is correlated with clinical manifestations of health and disease. The abnormalities found in the physical examination of certain organ systems are correlated with the abnormalities of laboratory values found. Patient conferences are used to demonstrate the value of obtaining all data about patients to solve their problems. Students are expected to learn to do this for patients with whom they have contact during ward sessions.

MED-205—the basic course in medicine for all students is the eight-week clinical clerkship in the second year. Students' desire to give good care is the motive which drives them to excellence. The student learns to identify problems of the patient and marshal the information obtained by past training. The student recognizes and attempts to focus the data learned from the basic sciences to specific clinical problems. Using patients as a means of integration, students should continue reading in anatomy, physiology, microbiology, pharmacology, and biochemistry. Problems encountered are discussed with fellow students, interns, residents, and senior staff to gain familiarity with ideas and concepts by actively manipulating them.

The goal of the Department of Medicine is for students to have as many learning experiences as possible by active participation. It is hoped that they will enjoy these learning experiences so much that they will continue them as long as they see patients. The goal is not to cover the entire field of medicine. Students will engage in extensive postdoctoral clinical or research training. The aims are to assist students in acquiring clinical skills and learning habits that will enable them to identify and solve new problems as they are encountered.

In caring for patients with ill-defined genetic and acquired differences with numerous unknown variables, many erroneous conclusions may be made. Students must learn to examine carefully oral and written statements, and inquire of all authorities the source of data which underlie their conclusions. One way for students to learn the difficulties in drawing accurate conclusions about biological systems is to give them opportunities to establish facts on the basis of their own research. This is a very effective method of teaching. The intellectual discipline involved better prepares the future clinician for the role of a lifetime of learning and enables academically oriented students to assess their own potentialities for investigative careers.

The second-year course in medicine is aimed at providing students with the basic tools used in the practice of medicine. This is the time when they should consolidate the material learned during the first year and apply it to the study of their own patients. During a brief eight-week course it is not possible to cover the entire body of knowledge of internal medicine. Therefore, students are provided with a series of representative learning experiences based on the case study method. The goals are to teach methods of approach to patients and to provide a





firm foundation for the solution of new medical problems as they are encountered in the months and years ahead.

Specific expectations of sophomore students are: (1) To obtain and carefully record meaningful histories and perform physical examinations on two or three patients each week. On the day of admission the student will review and compare findings with the responsible intern or resident. Difference of opinions should be discussed and, when possible, resolved by a return to the bedside. The following day students will present their data to the attending physician. The presentation should be well organized (with the help of the resident), and the presented illness should include a carefully reasoned documentation of the events in chronological order which led to the patient's hospitalization. It should contain pertinent facts leading to the most likely diagnosis and also the pertinent negative facts which weigh against a possible alternative diagnosis. (2) To examine their patients repeatedly and reflect on the diagnostic and therapeutic management. It is their responsibility to understand the objectives and to know the results and the interpretation of all diagnostic tests applied to their patients. They will actually perform as many of the necessary tests as possible and record their interpretations in frequent progress notes. (3) To read widely on topics related to their patients, particularly in applicable basic sciences to understand disease mechanisms. They should begin with the descriptions in standard textbooks of medicine which serve as a useful introduction to the subject. Special aspects of the patient's problem should be pursued in basic science or other textbooks, in monographs, or in relevant journals. (4) To know in depth those diseases present in their own patients, including different diagnostic features which distinguish those conditions from related diseases. At this stage of training they are not expected to have equivalent depth of knowledge of diseases that they have not yet encountered, but are responsible for knowing the major points about patients presented in rounds or at the various noon conferences. Principles of therapy should be understood, but details of drug regimens are better left for subsequent experiences. Students are encouraged to participate actively in all teaching exercises on the ward, whether or not their own patients are being discussed.

## Electives

**MED-202(C). Introduction to Clinical Neurology.** Overall view of clinical neurology for nonspecialists. Emphasis on clinical techniques in neurologic examination, approaches to neurologic diagnosis and anatomic, pathologic and physiologic basis for localization of neurologic lesions. Electroencephalogram and neurooentgenogram interpretation. Common neurologic disturbances at bedside conferences. Includes neurology, neurosurgery, staff conferences, and patient presentation. Terms: 1, 2, 3, and 4. Weight: 2. *Roses and Neurology staff*

**MED-204(C). Neurology Tutorial.** A view of neurology with a clinical or basic science emphasis, depending on student interest. Supervised examination of neurologic patients, discussion seminars, and a guided program of reading. Course especially for students planning careers in phychiatry, neurosurgery, internal medicine, orthopaedics or neurology. Terms: 1, 2, 3, 4. Weight: 4. *Roses, Tourian, Olanow, Kaufman, Hurwitz, and Schold*

**MED-206(C). Clinical Clerkship in Neurology.** A clerkship in clinical neurology emphasizing diagnosis and therapy of neurologic diseases. The students will participate in inpatient and outpatient workups, teaching conferences, and diagnostic studies. Every term. Weight: 4-8. *Roses and Neurology staff*

**MED-207(C). Advanced General Medicine.** The student is assigned to inpatient medical services at Duke or the Veterans Administration Medical Center,

and participates actively in the workup and management of patients, under the supervision of the house staff. By special arrangement the student may spend four of the eight weeks in an intensive care unit or emergency room. Also by special arrangement the student may function as a subintern at the Veterans Administration Medical Center, and manage five-eight patients with the help of the ward resident. Every term. Weight: 8. *Wyngaarden and staff*

**MED-209(C). Allergy and Respiratory Diseases.** Course provides training in the clinical and laboratory aspects of allergic and respiratory illnesses. Rounds, seminars, and conferences are held throughout the week for instruction in allergy, clinical immunology, basic immunology, pulmonary function evaluation, pulmonary physiology, chest radiology, pulmonary pathology, bronchoscopy, and acute care. Students will do their work on the consult, clinical, or MICU services. The course may be individualized to meet requirements of the student. Every term. Weight: 4 or 8. *Sieker, Buckley, Cooper, Kylstra, Pratt, Saltzman, Crapo, Young, Kariman, and Foscue*

**MED-210(C). Advanced General Medicine, Durham County General Hospital.** Under the supervision of the junior assistant resident, the student will assume prime responsibility for the care of five to seven patients admitted to the teaching service at DCGH. Teaching input will come from the division of General Medicine (Duke) and the physicians whose patients are admitted to DCGH. Every term. Weight: 8. *Neelon, McKee, Gilbert, Lecocq, Linpors, and Kelly*

**MED-211(C). Advanced General Medicine in a Community Hospital (Cabarrus Memorial Hospital, Concord, N. C.).** The student will be responsible for the management of inpatients under the supervision of a senior resident and the senior staff and will also be introduced to the management of patients by community physicians on an outpatient basis. Students interested in taking the course must apply and be interviewed for acceptance. Every term. Weight: 9. *Wagner, Long, and Kelling*

**MED-212(C). Talking to Patients.** Each week the instructor will interview, before the class, a patient previously unknown to him or her to demonstrate the principles of medical interview. Together the class will identify the clinical problems revealed by the interview. Each week a subgroup of the class will be responsible for some fundamental aspect of these problems and present what they have learned during the first hour of the next week's class. Basic medical sciences should be the foundation of the student presentations. Terms: 1-2 or 3-4. Weight: 1 or 2. *Neelon*

**MED-215(C). Clinical Dermatology.** Students will be integrated into the dermatology program for one month. They will attend public and private outpatient clinics at Duke Hospital and the Veterans Administration Hospital. They will participate in inpatient teaching rounds, the clinical diagnostic conference, pathology conference, and basic science seminar. The course is designed to teach elements of dermatological diagnosis, management, and pathophysiology. Every term. Weight: 4. *Lazarus, Callaway, Gilgore, Goldsmith, Jegasothy, Pinnell, and Resident Staff*

**MED-216(C). Clinical Dermatology.** Student will be given a series of three lectures weekly using 35 mm. Kodachromes to illustrate both clinical conditions and microscopic sections of the pathologic changes in an effort to understand the pathologic physiology of dermatologic disorders and thus management and treatment. Patient demonstrations will be made one-half day to greatly enhance clinical experience. Lecture and demonstration course only. See MED-215(C) for



course offering 4 credits. Term: 3. Weight: 2. *Lazarus, Callaway, Gilgore, Goldsmith, Pinnell, and Jegasothy*

**MED-217(C). Gastroenterology.** The role of the gastrointestinal tract and liver in health and disease is emphasized through use of liver and small bowel biopsy with morphological, biochemical, and physiological studies in the daily diagnosis and care of patients hospitalized on the gastroenterology inpatient service and general wards of Duke and V.A. Hospitals. Every term. Weight: 4 or 8. *Tyor, Garbutt, Mansbach, McLeod, Quarfordt, and Killenberg*

**MED-221(C). Metabolism and Endocrinology.** A general course in which the whole patient is approached from an endocrine point of view. Clinical and laboratory diagnosis and titration of therapy are facilitated by the use of a standard data base and study of appropriate flow sheet parameters. The student participates in the evaluation and management of both inpatients and outpatients. Alternatives for eight credits include the V.A. consultation service, the Duke Staff and Clinical Research Unit Service, and the Duke Private Service Staff outpatient clinic and all endocrine conferences are attended on each service. A 4-credit option (four weeks) allows one student to choose Drs. Ellis, Johnson, or McPherson as the clinical preceptor. The student will care for private inpatients and both staff and private outpatients under the preceptor's guidance. This option must be scheduled by the student with the preceptor before registering for the course. Every term. Weight: 4 or 8. *Lebovitz, McPherson, Ellis, Feldman, Neelon, Johnson, Drezner, Feinglos, and Burch*

**MED-227(C). Rheumatic and Genetic Diseases.** The student acquires experience indepth in the recognition and care of patients with generalized connective tissue diseases, immunologic diseases, and metabolic arthropathies. The student works up and follows patients on wards and in the clinic. Daily rounds with the staff extend the experience. Specialized laboratory and clinical techniques relating to immunologic and metabolic functions are learned. A comprehensive approach to the evaluation and treatment of patients with inflammatory immune deficiency or certain metabolic disorders is emphasized. Full time eight weeks recommended. May be taken for 4 units of credit with permission. Every term. Weight: 4 or 8. *Snyderman, Caldwell, Hirshfield, Holmes, Kredich, Pepe, Rice, and Wyngaarden*

**MED-229(C). Nephrology.** Fundamental and clinical aspects of nephrology, renal physiology, hypertension, renin-angiotensin metabolism, and disorders of salt and water metabolism. Full clinical participation on inpatient and outpatient services and the dialysis-transplantation service is offered. Attendance at several scheduled rounds, conferences, and seminars is required. Every term. Weight: 4 or 8. *Robinson, Clapp, Dennis, Gallis, Harris, Gunnells, Gutman, Portwood, Stead, Tisher, and Yarger*

**MED-230(C). Clinical Hematology and Oncology (V.A. Hospital).** This course provides a broad exposure to hematologic and oncologic disorders. As a member of the section the student actively participates in the following: (1) hematology-oncology consultation service for the V.A. wards, (2) biweekly hematology outpatient clinic, (3) management of inpatients with specific hematologic disorders. The wide variety of disorders seen includes leukemias, lymphomas, anemias, bleeding disorders, gammopathies, etc. An opportunity is provided for the student to learn and perform the specialized clinical and laboratory techniques involved in the evaluation of these patients. Ample time is available for contact with the hematology staff and library research. Every term. Weight: 8. *Logue, Weinberg, Cohen, Stead, Scullin, Kurlander, and Blumfelder*

**MED-231(C). Clinical Hematology and Oncology (Duke Hospital).** Students are given a unique opportunity to participate actively in care and study of



patients with wide variety of hematologic diseases, anemias, bleeding disorders, leukemias, lymphomas, secondary gout, etc. Systematic, quantitative clinical evaluation, and basic techniques of blood and marrow examination, serum and urine protein studies are emphasized. Every term. Weight: 8 (4 with permission of Dr. Rosse). *Rosse, Rundles, Silberman, Moore, Huang, Laszlo, Anderson, Fay, Cox, and Tallos*

**MED-236(C). Research Topics in Endocrinology and Metabolism.** Research training and experience in the field of endocrinology and metabolism. This is arranged individually between the student and a specific member of the endocrine staff. Every term. Weight: 8. *Lebovitz, Feldman, Drezner, Neelon, and staff*

**MED-242(C). Clinical Cardiology (Duke).** Considerable experience in the clinical aspects of cardiovascular disease is provided the student by participation in patient care, consultations, Cardiac Care Unit and adult Cardiac Catheterization Laboratory. Specific experience is available in learning to read electrocardiograms and vectorcardiograms, as well as in learning about echocardiography. Four, one-to-two-hour teaching conferences every week in arrhythmias, hemodynamics, and cardiovascular radiology and pharmacology complement the learning experience. Emphasis will be placed on bedside teaching, correlating cardiac physical diagnosis and cardiac catheterization hemodynamics. The eight-week rotation at present consists of three weeks on the consultation service where EKG and VCG are read, consultants seen, and patients presented to the senior staff; two weeks on the Cardiac Care Unit; and two weeks in the Cardiac Catheterization Laboratory and one week in the Echo Laboratory where daily bedside teaching and correlation with cardiac catheterization and heart surgery findings are stressed. Every term. Weight: 8. *Peter, Wallace, Wagner, Chen, Kong, Strauss, Pritchett, Orgain, and Waugh*

**MED-244(C). Clinical Cardiology (V.A. Hospital).** Fundamentals of clinical cardiology, including physical diagnosis of the cardiovascular system, normal and pathologic cardiovascular physiology, electrocardiography, vectorcardiography, echocardiography, cardiopulmonary resuscitation, and other noninvasive and invasive diagnostic techniques. Students rotate through the consultation service where they participate in the evaluation on inpatient consultations and attend consultation rounds with senior staff members (four weeks), the Cardiac Catheterization Laboratory where they participate in the catheterization procedure and the evaluation of all catheterization data (one week), and the Coronary Care Unit where they participate in the evaluation and management of acute cardiovascular emergencies (three weeks). Four one-hour lectures, designed specifically for the students, are given each week by the Cardiology staff. Every term. Weight: 8. *Greenfield, Cobb, Bashore, Baker, and Morris*

**MED-245(C). Coronary and Intensive Care Medicine.** This is offered as an elective for the fourth year medical student who would like to spend time learning coronary and intensive care medicine within the setting of a community hospital. Emphasis is on cardiovascular medicine but there is a broad range of intensive care experience included. The fourth year student will work on a team with a medical senior assistant resident and will share night call every fourth night as the primary contact for new admissions to the medical intensive care unit and coronary intensive care unit at Durham County General Hospital. Teaching sessions are held four times weekly with emphasis on clinical material. Every term. Weight: 8. *Wagner*

**MED-250(C). Clinical Allergy-Immunology.** The specialist in allergy-immunology relies heavily on the use of laboratory techniques as an aid to patient evaluation. This elective is designed to familiarize the student with the clinical uses of the allergy-immunology laboratory. The course is oriented toward clinical, important departures from normal immune function. Precepted experience is

provided in the evaluation of patients with impaired host resistance, hypersensitivity, autoimmunity, heightened susceptibility to neoplasia, and other immune disorders. Participation in clinically applicable immunoserologic methods is a part of the required course work experience. Selected readings, including a critical awareness of the recent literature, are used to gain an understanding of specific clinical problems. Terms: 1 or 2. Weight: 8. *C. E. Buckley*

**MED-252(C). Physiology of Nephrology.** This course is composed of lectures designed to provide insight into the pathophysiology of clinical fluid and electrolyte problems. An attempt is made to integrate established physiologic principles into an analysis of common clinical problems. It is the intent of this course to equip the student with sufficient general information to permit adaptation of fluid and electrolyte therapy to the great variety of specific patient-related problems which will be encountered as a house officer. Terms: 1 or 3. Weight: 1. *Clapp and Gutman*

**MED-254(C). Enterohepatic Circulation and Lipoprotein Metabolism.** There will be detailed explorations of biological and related clinical aspects of hepatic and intestinal functions. The course will be structured chiefly through lectures and relevant patient presentations. Term: 1. Weight: 2. *Tyor, Lack, Quarfordt, McLeod, Mansbach, Garbutt, and Killenberg*

**MED-256(C). Ambulatory Patient Care.** Students are assigned to the outpatient department and the emergency room and will see patients assigned to them and to colleague house officers. An individualized outpatient/emergency room schedule may be designed which will permit the student to have a specific balance of patients with acute and chronic illness. Every term. Weight: 1-8. *McKee and staff*

**MED-260(C). Clinical Infectious Disease.** This course will provide experience in the clinical and laboratory diagnosis of infectious diseases and their therapy. Emphasis will be placed on learning through active participation in infectious disease consultations and library research. Every term. Weight: 4 or 8. *Durack, Gallis, Hamilton, Suydam Osterhout, Barry, Klein, and Zwadyk*

**MED-262(C). Diabetes Mellitus: A Camping Experience.** North Carolina Camp for Diabetic Children provides a camping experience for 100 children annually. Medical support is provided by medical and nursing students and dietetic interns, under University staff supervision. Each student is directly responsible for the management of one cabin of campers. The student participates in infirmary duty, prepares one of the daily staff seminars, and joins in the general camp activities. Room and board provided. Also offered in Nursing School. (Must be cleared in advance with Dr. Ellis, since students from other schools are also accepted.) Summer Term I and Summer Term II. Weight: 2. *Ellis and Skyler*

**MED-264(C). Computer Aided Instruction in Clinical Neurology.** The computer program simulates the patient-physician encounter of clinical practice. The purpose of the program, which includes a wide variety of cases in ten major areas of neurology, is to teach the student the efficient and economical utilization of laboratory procedures, and the branching logic necessary in accurate neurological diagnosis. Terms: 1, 2, 3, and 4. Weight: 2. *Roses and Heyman*

**MED-266(C). Essentials of Rheumatic Disease.** The purpose of this course is to give medical students the opportunity to review in the most concise and efficient manner the basic essentials of clinical rheumatic disease. The emphasis will be on clinical diagnosis and management. Term: 1. Weight: 1. *Pepe*

**MED-268(C). Psychosocial Aspects of Medical Illness.** Seminars and supervised clinical experiences on the medical wards and clinics will be used to provide

the student with knowledge of basic principles and practical clinical skills relevant to determining the role of psychosocial factors in the etiology and course of physical disease in man. Also listed as PSC-268(C). Every term. Weight: 2. *Williams*

## Microbiology and Immunology

James B. Duke Professor: Wolfgang K. Joklik, D. Phil. (Oxford, 1952), *Chairman*.

James B. Duke Professor: D. Bernard Amos, M.D. (Guy's Hospital, London, 1963).

Professors: Richard O. Burns, Ph.D. (Illinois, 1962); Eugene D. Day, Ph.D. (Delaware, 1952); Richard S. Metzgar, Ph.D. (Buffalo, 1959); Suydam Osterhout, M.D. (Duke, 1949), Ph.D. (Rockefeller Inst., 1959); Wendell F. Rosse, M.D. (Chicago, 1958); Robert W. Wheat, Ph.D. (Washington Univ., 1955); Hilda P. Willett, Ph.D. (Duke, 1949).

Adjunct Professors: James J. Burchall, Ph.D. (Illinois, 1963); John E. Larsh, Jr., Sc.D. (Johns Hopkins, 1943).

Associate Professors: Dani P. Bolognesi, Ph.D. (Duke, 1967); Rebecca H. Buckley, M.D. (North Carolina at Chapel Hill, 1958); Peter Cresswell, Ph.D. (London, 1971); Jeffrey Dawson, Ph.D. (Case Western Reserve, 1969); David T. Durack, D.Phil. (Oxford, 1973); Dolph Klein, Ph.D. (Rutgers, 1961); David J. Lang, M.D. (Harvard, 1958); Nelson L. Levy, M.D. (Columbia, 1967), Ph.D. (Duke, 1973); Harvey J. Sage, Ph.D. (Yale, 1958); David W. Scott, Ph.D. (Yale, 1969); Hilliard F. Seigler, M.D. (North Carolina at Chapel Hill, 1960); Ralph E. Smith, Ph.D. (Colorado, 1968); Ralph Snyderman, M.D. (State Univ. of New York, Downstate Med. Center, 1965); Thomas C. Vanaman, Ph.D. (Duke, 1968); Frances E. Ward, Ph.D. (Brown, 1965); Catherine M. Wilfert, M.D. (Harvard, 1962); Peter J. Zwadyk, Ph.D. (Iowa, 1971).

Assistant Professors: Charles E. Buckley III, M.D. (Duke, 1954); Jeffrey J. Collins, Ph.D. (Harvard, 1972); Sharyn Endow, Ph.D. (Yale, 1975); Linda R. Gooding, Ph.D. (Cornell, 1972); Gale B. Hill, Ph.D. (Duke, 1966); Jack D. Keene, Ph.D. (Washington, 1974); Hillel S. Koren, Ph.D. (Freiburg and Max Planck Inst., 1971); Peter K. Lauf, M.D. (Frieburg, 1960); Jonathan P. Leis, Ph.D. (Cornell, 1971); David R. McClay, Jr. (North Carolina at Chapel Hill, 1971); Thomas G. Mitchell, Ph.D. (Tulane, 1971); Joseph L. Wagner, Ph.D. (North Carolina at Chapel Hill, 1972); Samuel A. Wells, Jr., M.D. (Emory, 1961).

Assistant Medical Research Professors: John Cambier, Ph.D. (Iowa, 1975); Ronald B. Corley, Ph.D. (Duke, 1975); Edward C. Hayes III, Ph.D. (Rutgers, 1970); M. Vickers Hershfield, Ph.D. (Georgetown, 1973); Armead H. Johnson, Ph.D. (Baylor, 1971); Nancy Mendell, Ph.D. (North Carolina at Chapel Hill, 1972); Sara E. Miller, Ph.D. (Georgia, 1972); Emily G. Reisner, Ph.D. (Case Western Reserve, 1969), Ph.D. (Duke, 1971); W. David Sedwick, Ph.D. (Pennsylvania, 1970); Stephen R. Turner, Ph.D. (Duke, 1971).

Adjunct Assistant Professors: Lynn P. Elwell, Ph.D. (Oregon, 1974); Lorraine Flaherty, Ph.D. (Cornell, 1973); John K. Whisnant, Jr., M.D. (Wake Forest, 1968).

Associate: Harry A. Gallis, M.D. (Duke, 1967).

Medical Research Associates: Joy K. Anderson, Ph.D. (North Dakota, 1974); Jonathan C. Graff, Ph.D. (Maryland, 1971); William J. Hubbard, Ph.D. (Iowa, 1973); Lawrence B. Lachman, Ph.D. (Boston, 1973); Joseph K.-K. Li, Ph.D. (California at Los Angeles, 1974); Carol C. Whisnant, Ph.D. (Duke, 1975).

Lecturer: Darell D. Bigner, M.D. (Duke, 1965).

Instructor: A. Proctor, M.S.

Research Associates: A. Berger, Ph.D., D. Bullard, M.D., W. Cashdollar, Ph.D., G. Cianciollo, Ph.D., B. Dowell, Ph.D., S. Geier, Ph.D., S. Greenberg, M.D., R. Gutman, Ph.D., G. Hudson, Ph.D., P. Huvs, Ph.D., D. Iglehart, M.D., J. Jandinski, D.M.Sc., P. Jensen, Ph.D., R. Kim, Ph.D., P. Lee, Ph.D., S. Livnat, Ph.D., G. McCarty, M.D., K. Misono, Ph.D., D. Pickup, Ph.D., J. Price, Ph.D., K. Singer, Ph.D., M. Venkataman, Ph.D., M. Veigl, Ph.D., M. Verghese, Ph.D., T. Watts, Ph.D., L. Wright, Ph.D.

## Required Courses

MIC-200—the core course for all freshman medical students—is given in the second semester of the first year. An intensive study is made of the common bacteria, viruses, fungi, and parasites which cause disease in man. The didactic portion of the course focuses on the nature and biological properties of micro-organisms causing disease, the manner of their multiplication, and their interaction with the entire host as well as specific organs and cells. The nature of induced immune processes by active and passive immunization and chemotherapy are included.

The laboratory portion of the course is designed to acquaint students with the methods and procedures employed in bacteriological laboratories, to provide the



basis for an understanding of cell-virus interactions and to demonstrate the nature of the more common pathogenic fungi and parasites. Clinical case histories are presented by the clinical staff to correlate this course with patient care.

**MIC-201**—a short core course in immunology for freshman medical students. The course includes a general introduction to the development of various special areas of immunology such as immunochemistry, immunohematology, and immunogenetics including transplantation and tumor immunology. The initial lectures describe the properties of antibodies, the characteristics of an antigen, classes of reactive lymphocytes and accessory cells, the biology of substances released from lymphocytes (lymphokines) and the complement system. The course is enriched with clinical presentations and by discussion groups combined with practical demonstrations.

## Electives

**MIC-242(B).<sup>\*</sup> Mechanisms of Host-Parasite Interaction and Microbial Pathogenicity.** A lecture-seminar course on the principles and problems of host-parasite interactions at the cellular and molecular level. Emphasis will be on the roles of microbial structures and products in the virulence and pathogenesis of acute, chronic, and toxigenic infectious disease systems. Terms: 3 and 4. Weight: 2. *Wheat*

**MIC-252(B).<sup>\*</sup> General Virology and Viral Oncology.** The first half of the course will be devoted to a discussion of the structure and replication of mammalian and bacterial viruses. The second half will deal specifically with tumor viruses, which will be discussed in terms of the virus-cell interaction, the relationship of virus infection to neoplasia, and the role of the immunological response to tumor virus infection. The viral oncology part of the course may be taken for half credit in term 4. In this case, the permission of the instructors is required. Terms: 3 and 4. Weight: 4. *Joklik, Keene, Hayes, Bolognesi, Collins, and Bigner*

**MIC-282(B).<sup>\*</sup> Molecular Microbiology.** A study of the structure, growth, and replication of bacteria with a detailed analysis of informational and catalytic macromolecules. Major topics discussed are biochemistry and function of structural components, genetic and metabolic regulatory mechanisms, RNA and protein synthesis, and the enzymology of DNA replication. Terms: 1 and 2. Weight: 4. *Burns, Leis, Vananan, Endow, and Hershfield*

**MIC-291(B). Basic Immunology.** Structure and function of immunoglobulins. Characteristics of synthetic and natural antigens. Specificity and cross-reactivity. Methods of immunologic analysis. Cellular aspects and kinetics of antibody formation. Forms of immunologic responsiveness and unresponsiveness. Cellular cooperation. Elicitation and control of immune response. Terms: 1 and 2. Weight: 4. *Scott, Dawson, Snyderman, and Corley*

**MIC-294(B).<sup>\*</sup> Immunobiology of the Macrophage.** A comprehensive study of the mononuclear phagocytic system. Areas to be discussed include the regulation of the immune response by macrophages and their products, their functions in microbial infections and in tumor surveillance. Tissue distribution of monocytes and macrophages, functional heterogeneity of macrophages, and the use of macrophage cell lines will also be discussed. Terms: 3 and 4. Weight: 2. *Koren, Adams, Russell, and Snyderman*

**MIC-296(B).<sup>\*</sup> Immunochemistry.** The structures, bioassembly, and reactions of the immunoglobulins. Primary and conformational aspects of the immunoglobulin chains—sequences, subgroups, domains, allotypes, evolution. The antibody binding site—location, specificity, idiotypes antigen accommodation.



Affinity, heterogeneity, homogeneous binding, kinetics. Sequential, conformational, and quarternary determinants. Active centers of multivalent antigens. The immune responses, affinity and immunoselection, T and B cells. Terms: 3 and 4. Weight: 3. *Day, Cresswell, Dawson, and Sage*

**MIC-301(B). Principles of Infectious Disease.** A lecture and seminar course to familiarize students with the basic biologic concepts, the pathogenesis, and the clinical manifestations of infectious diseases caused by bacteria, viruses, fungi, rickettsia, and selected parasites. The host defenses to infectious agents including the acute inflammatory response and humoral and cellular immunity, and current and future trends in the development of vaccines and antimicrobial and antiviral agents will also be discussed. Terms: 1-2. Weight: 6. *Wilfert, Hayes, Daniels, Joklik, Smith, Gutman, Lang, Mitchell, and Frothingham*

**MIC-306(B). Clinical Microbiology-Immunology.** A bench-training course in methods used in clinical microbiology stressing isolation and characterization of clinically significant microorganisms. Every term. Weight: 8. *Klein and Zwadyk*

**MIC-325(B). \* Medical Mycology.** Comprehensive lecture and laboratory coverage of all the fungi pathogenic for humans. Practical aspects as well as future trends in the mycology, immunology, diagnosis, pathogenesis, and epidemiology of each mycotic agent will be explored. There will be several invited lecturers, each an internationally recognized scientist, discussing their particular areas of mycological expertise and current research. Term: month of July. Weight: 4. *Mitchell*

**MIC-330(B). \* Medical Immunology.** A course designed to present the basic concepts of immunology as they relate to human disease. Emphasized will be tumor immunology, autoimmunity, neuroimmunology, immunohematology, and immunologic deficiency diseases. Case presentations when appropriate. Terms: 3 and 4. Weight: 6. *Levy, C. Buckley, R. Buckley, Snyderman, and Rosse*

**MIC-336(B). \* Immunogenetics.** Basic concepts in genetic transmission, recombination, regulation. Elementary population genetics. Antigens of tissues and organs, distribution, extraction, and chemistry. Phylogeny of isoantigenic systems of man and animals. Tests for histocompatibility including lymphocyte interactions and reactivity. Change in antigenicity and immune responsiveness in carcinogenesis. Immunologic factors in pregnancy and in homotransplantation of organs. Terms: 1 and 2. Weight: 2. *Amos and Ward*

**MIC-339(B). Diagnostic Microbiology and Infectious Disease.** Introduction to the methods for the laboratory diagnosis of infectious disease and their clinical application. Basic biologic and clinical aspects will be correlated in a seminar-lecture format. Term: every term except Summer Term I. Weight: 2. *Suydam Osterhout*

**MIC-399(B). Preceptorship in Microbiology and Immunology.** An individual reading and/or laboratory course in specialty areas supervised by an individual faculty member. Acceptance, nature of topic, and amount of credit by individual arrangement with proposed faculty member. Every term. Weight: 1-8 per 8 weeks. *Microbiology and Immunology Staff*

**MIC-403(B). Investigative Problems in Disease Caused by Viruses, Mycoplasmas, Bacteria, and Fungi.** Introduction to techniques for research with viruses, mycoplasmas, bacteria, and fungi; clinical experience with infectious diseases related to the investigative programs. The student will be involved in some aspect of laboratory research, and should consult with the investigator with

whom work will be done prior to signing up for the course. Every term. Weight: 8. *Lang, Wilfert, Gutman, Hamilton, and Gallis*

**MIC-405(B). Research in Immunohematology.** The course is designed to provide the opportunity for students to select a project involving immunohematologic techniques and to pursue, through original research, the project conclusion. In particular, projects concerned with complement, red cell lysis, and red cell antigens will be stressed. Close supervision will be provided. Weekly seminars in immunohematology will be held. Library readings will be stressed. Terms: 1, 2, 3, or 4. Weight: 6-8. *Rosse*

**MIC-411(B).<sup>\*</sup> Molecular and Cellular Bases of Development and Differentiation.** Emphasis is placed on the biochemistry of the cell surface as the basis of cell recognition, control of cell cycle and overall tissue organization. An analysis of protein nucleic acid interactions in chromosome structure and function are considered in light of newer concepts of transcriptional and translational control. Studies also include nuclear cytoplasmic interactions as well as hormone induction of differentiation and development. The course is designed to study the phenomena of development and differentiation and has been organized on a multidisciplinary level. The course is part of the lecture series of the development and differentiation study program, DDS-201(B). Terms: 1 and 2. Weight: 3-4. *McCarty, Counce, Kaufman, and Padilla*

## Obstetrics and Gynecology

Professor: Roy T. Parker, M.D. (Med. Coll. of Virginia, 1944), *Chairman*.

Professors: William T. Creasman, M.D. (Baylor, 1966); Arthur C. Christakos, M.D. (Med. Coll. of South Carolina, 1955); M. Carlyle Crenshaw, Jr., M.D. (Duke, 1956); Stanley A. Gall, M.D. (Minnesota, 1962); Charles P. Hammond, M.D. (Duke, 1961); Charles H. Peete, Jr., M.D. (Harvard, 1947).

Associate Professors: Nels Anderson, Ph.D. (Purdue, 1964); George W. Brumley, M.D. (Duke, 1966); Gail B. Hill, Ph.D. (Duke, 1966); Marcos J. Pupkin, M.D. (Univ. of Chile, 1960); David W. Schomberg, Ph.D. (Purdue, 1965); Lee Tyrey, Ph.D. (Illinois, 1969); John C. Weed Jr., M.D. (Duke, 1968); R. Herbert Weibe, M.D. (Saskatchewan, 1962).

Associate Clinical Professors: James L. Allen, M.D. (Emory, 1965); Rudy W. Barker, M.D. (North Carolina at Chapel Hill, 1967); David B. Crosland, M.D. (North Carolina at Chapel Hill, 1958); John L. Currie, M.D. (North Carolina at Chapel Hill, 1967); Jerry Lee Danford, M.D. (Duke, 1967); Eleanor B. Easley, M.D. (Duke, 1944); Carl A. Furr, Jr., M.D. (North Carolina at Chapel Hill, 1958); Arned L. Hinshaw, M.D. (Duke, 1964); Clayton J. Jones, M.D. (Tennessee, 1952); Richard L. Lassiter, M.D. (North Carolina at Chapel Hill, 1965); Richard L. Pearse, M.D. (Harvard, 1931); Kenneth A. Podger, M.D. (Duke, 1941); E. Frank Shavender, M.D. (North Carolina at Chapel Hill, 1968); Joseph A. Stephens, M.D. (Pittsburgh, 1952); Thomas A. Stokes, Jr., M.D. (Duke, 1955).

Assistant Professors: W. Allen Addison, M.D. (Duke, 1960); Lillian R. Blackmon, M.D. (Arkansas, 1963); Arnold S. Grandis, M.D. (Duke, 1974); Arthur F. Haney, M.D. (Arizona, 1972); Frederick Jelovsek, M.D. (Michigan, 1963); Joseph M. Miller, Jr., M.D. (Duke, 1973); John F. Steege, M.D. (Yale, 1972); Earl A. Surwit, M.D. (Georgetown, 1973); Selman I. Welt, M.D. (North Carolina at Chapel Hill, 1972); Christopher J. Wilson, M.D. (Baylor, 1973).

Assistant Clinical Professors: Trogler F. Adkins, M.D. (Duke, 1936); John V. Arey, M.D. (Harvard, 1946); John R. Ashe, Jr., M.D. (Duke, 1948); Yancey G. Culton, Jr., M.D. (Duke, 1956); Lance T. Monroe, M.D. (New York Coll. of Med., 1932); Donald T. Moore, M.D. (Meharry Med. Coll., 1958); William A. Nebel, M.D. (North Carolina at Chapel Hill, 1962); Philip H. Pearce, M.D. (Duke, 1960); Steven M. Scott, M.D. (Indiana, 1974); Roston M. Williamson, M.D. (Med. Coll. of Georgia, 1951); Robert K. Yowell, M.D. (Duke, 1961).

Research Associates: M. Anne Browne, A.B.; Louise A. Kaufmann, B.A.; Larry Kodack, B.A.; Jeffrey May, Ph.D.

### Required Course

In Introduction to Clinical Medicine the first-year student receives instruction in the fundamentals of obstetric and gynecologic history and pelvic examinations.

OBG-202—required of all second-year students—consists of nine weeks in general obstetrics and gynecology. Students attend lectures, work daily in the

general and special outpatient clinics, and are assigned patients on the obstetric and gynecologic wards. Students share in patient care, teaching exercises, and in daily tutorial sessions with the faculty. Clinical conferences, a gynecologic-pathology conference, endocrine conferences, and correlative seminars and lectures are included.

## Electives

**OBG-205(C). Gynecologic Cancer.** A survey of malignancy of the reproductive system. The didactic portion of the course is supplemented by presentations of patients currently in therapy on the wards and in the Gynecologic Cancer Clinic. Every term. Weight: 4 or 8. *Creasman, Weed, Parker, and Curry*

**OBG-213(C). Preparation for Practice, Cape Fear Valley Hospital, Fayetteville Area Health Education Center.** This is a unique opportunity to receive both didactic exposure and clinical experience in obstetrics and gynecology in Cape Fear Valley Hospital, a large community hospital in Fayetteville, North Carolina, where almost 5,000 patients are delivered each year. A student will be expected to function as an intern. The student will actively participate in the care of patients in the labor and delivery rooms, assist at surgery, and render postoperative care. This is a community hospital experience rather heavily weighted in clinical obstetrics. Students will be exposed to a large volume of clinical material. Senior residents from Duke rotate through Cape Fear Valley Hospital. Duke faculty members provide additional guidance. This elective can be mixed, four weeks at Cape Fear Valley Hospital and four weeks at Duke but not for a smaller septum. Every term. Weight: 4 or 8. *Christakos, Addison, McDaniel, and staff of Cape Fear Valley Hospital*

**OBG-229(C). Endocrinology Seminar.** Sessions with discussion of interesting clinical problems and related clinical and basic research in gynecologic endocrinology. Every term. Weight: 1. *Hammond, Wiebe, Haney, Schomberg, Tyrey, and fellows on Endocrine Division*

**OBG-231(C). Clinical Reproductive Endocrinology.** Course for students who desire additional basic and clinical instruction in examination, diagnosis and treatment of obstetric and gynecologic patients with endocrinopathy. Course consists of basic instruction in neuroendocrine and endocrine mechanisms correlated with examination and treatment of patients in the Endocrinology Outpatient Clinic. Every term. Weight: 4. *Hammond, Wiebe, Haney, Schomberg, Tyrey, and fellows on Endocrine Division*

**OBG-239(C). Perinatal Medicine.** A study of clinical factors during pregnancy, labor, delivery, and the first month of life. Emphasis will be placed on abnormal conditions of pregnancy as related to the infant, prenatal pathological conditions adversely afflicting the fetus and newborn, and early management of the infant. Current problems in maternal-fetal relationships will be outlined. The clinical rotation will consist of half time in the delivery room and half time in the FTN and ICN nurseries. (See also PED 239 and PED 225.) Every term. Weight: 8. *Blackmon and Crenshaw*

**OBG-243(C). Sex Education.** This course is designed to prepare health professionals for dealing with situations involving sex education and counseling. A series of fourteen undergraduate lectures, given as part of the undergraduate course, Zoology 198.6, "Human Sex and Sexuality," will survey biological, psychological, sociocultural, and ethical aspects of human sexuality. Three additional training sessions, specifically for medical students, will deal with the design, organization, and implementation of educational and counseling programs. The





final eight weeks of the course will be spent gaining practical experience. Projects may be of the student's design, approved by the committee, or the student may participate in one of the ongoing projects of the committee such as teaching the seventh grade curriculum in the public schools, writing curricula for other grade levels. Terms: 1 and 2 or 3 and 4. Weight: 3. *Steege, Steinbook, Weiler, Parker, Katz, Christakos, and Shirley Osterhout*

**OBG-245(C). Office Gynecology.** For students preparing for general practice, medicine, pediatrics, and surgery. Outpatient clinic and emergency room diagnosis and patient care are taught. Every term. Weight: 4 or 8. *Parker and staff*

**OBG-247(C). Clinical Obstetrics.** For students preparing for general practice and medicine or pediatrics. Antepartum, intrapartum and postpartum patient care are stressed and practical experience in the delivery room is provided at an intern level. Every term. Weight: 4 or 8. *Crenshaw, Pupkin, and staff*

**OBG-249(C). Clinical Gynecology.** For students preparing for general practice, surgery, and urology. Preoperative diagnosis and preparation and postoperative care are stressed. In addition, minor operative procedures are taught and students assume the responsibilities of an intern. Every term. Weight: 4 or 8. *Peete, Addison, Christakos, and staff*

**OBG-251(C). Advanced Reproductive Endocrinology.** An indepth program to involve students in detailed study of the clinical and laboratory aspects and literature regarding reproductive biology, endocrinology, infertility, and conception control. Course consists of participation in the gynecologic endocrinology clinics, complicated obstetric clinic, infertility clinics, care of inpatients, and



pertinent laboratory exposure to techniques of study of reproductive hormonal substances. Terms: 1, 2, 3, and 4. Weight: 8. *Hammond, Wiebe, Haney, Anderson, Schomberg, Tyrey, and fellows on Endocrine Division*

**OBG-253(C). Preparation for Practice, Cabarrus Memorial Hospital, Concord, North Carolina.** This is an opportunity to receive both didactic exposure and clinical exposure in obstetrics and gynecology in the community hospital. The student will be expected to function as an intern and will participate actively in the care of the patients in the labor and delivery area, assist at surgery, and render postpartum and postoperative care. This is a community hospital experience rather heavily weighted in clinical obstetrics. The student will be exposed to a large volume of clinical material. The practitioners in the community are all board-certified obstetricians and gynecologists and are interested in student teaching. A Duke faculty person will provide additional guidance by visits once per week. This elective can be taken for four weeks for 4 units or eight weeks for 8 units. The student will be housed in quarters available for them. Every term. Weight: 4 or 8. *Pupkin, Ashe and staff of the Cabarrus Memorial Hospital*

## Ophthalmology

Professor: Robert Machemer, M.D. (Freiburg, Germany, 1959), *Chairman*.

Professors: Joseph A. C. Wadsworth, M.D. (Duke, 1939); Myron L. Wolbarsht, Ph.D. (Johns Hopkins, 1958); Maurice B. Landers III, M.D. (Michigan, 1963); W. Banks Anderson, Jr., M.D. (Harvard, 1956).

Associate Professor: Arthur C. Chandler, Jr., M.D. (Duke, 1959).

Assistant Professors: M. Bruce Shields, M.D. (Oklahoma, 1966); Gary N. Foulkes, M.D. (Columbia, 1970).

Assistant Clinical Professors: Judy H. Seaber, B.A. (Emory, 1962); Charles F. Sydnor, M.D. (Virginia, 1969); Bill S. Yamanashi, Ph.D. (Massachusetts Inst. of Tech., 1969).

Clinical Associates: R. Jeffrey Board, M.D. (Duke, 1974); Robert D. Dawson, M.D. (Meharry, 1943); J. Thomas Foster, M.D. (Duke, 1958); William R. Harris, M.D. (North Carolina at Chapel Hill, 1956); Edward K. Isbey, Jr., M.D. (Wayne, 1955); Martin J. Kreshon, M.D. (Marquette, 1954); W. Hampton Lefler, M.D. (Bowman Gray, 1963); Samuel D. McPherson, Jr., M.D. (Johns Hopkins, 1943); Edward E. Moore, M.D. (Harvard, 1942); Van B. Noah, M.D. (Bowman Gray, 1966); Henry G. Wagner, M.D. (George Washington, 1942).

## Electives

**OPH-201(C). Investigative Ophthalmology.** The student is assigned a project relating to basic ophthalmologic problems. Technical assistance, sufficient equipment and laboratory animals are supplied for the completion of the project. The student is expected to attend lectures scheduled for the house staff. Every term. Weight: 4-B. *Landers, Wolbarsht, and Anderson*

**OPH-203(C). General Ophthalmology.** A clinical preceptorship in which the student will participate and observe in the regular house staff activities, conferences, lectures, patient care, and treatment including surgery. Emphasis on the use of specialized ophthalmic apparatus is emphasized. Every term. Weight: 3-B. *Chandler and Shields*

**OPH-205(C). Medical Ophthalmology.** The ophthalmic signs and symptoms of systemic disease are presented in a lecture series. Oriented for those students interested primarily in pediatrics, internal medicine, or ophthalmology. Terms: 1, 2, 3, or 4. Weight: 1. *Shields and Foulks*

**OPH-211(C). Neuro-Ophthalmology.** Experience is provided in application of ophthalmic diagnostic technique toward the diagnosis of central nervous system and related ocular diseases. Clinical case and research review is included. Special

instrument utilization is emphasized. Permission of instructor is required. Terms: 1, 2, 3, or 4. Weight: 1 or 2. *Anderson and Sydnor*

**OPH-213(C). Ophthalmic Pathology.** The student will review all ophthalmic pathology specimens submitted weekly and any pertinent permanent specimens, and will aid in presentation of cases at weekly ophthalmic pathology conferences. Every term. Weight: 1. *Wadsworth and Klintworth*

**OPH-215(C). Ocular Diseases in Children.** The study of ocular disease in children includes muscular imbalances, congenital disorders, and neoplastic diseases to acquaint the student with a special pediatric and ophthalmologic phase. Term: special arrangements only. Weight: 1. *Mrs. Seaber*

## Pathology

Professor: Robert B. Jennings, M.D. (Northwestern, 1950), *Chairman*.

Professors: Darell D. Bigner, M.D. (Duke, 1965), Ph.D. (Duke, 1971); Bernard F. Fetter, M.D. (Duke, 1944); Donald B. Hackel, M.D. (Harvard, 1946); William W. Johnston, M.D. (Duke, 1959); Gordon K. Klintworth, M.D. (Univ. of Witwatersrand, 1957), Ph.D. (Univ. of Witwatersrand, South Africa, 1966); Philip C. Pratt, M.D. (Johns Hopkins, 1944); Kenneth A. Schneider, M.D. (Northwestern, 1959); Joachim R. Sommer, M.D. (Munich, 1951); F. Stephen Vogel, (Western Reserve, 1944); Benjamin Wittels, M.D. (Minnesota, 1952).

Adjunct Professor: Paul Nettesheim, M.D., D.M.S. (Bonn, West Germany, 1959).

Associate Professors: Dolph O. Adams, M.D. (Med. Coll. of Georgia, 1965); Ph.D. (North Carolina at Chapel Hill, 1972); Edward H. Bossen, M.D. (Duke, 1965); William D. Bradford, M.D. (Western Reserve, 1958); Peter C. Burger, M.D. (Northwestern, 1966); Charles A. Daniels, M.D. (Vanderbilt, 1966), Ph.D. (Duke, 1971); Jane G. Elchlepp, M.D. (Chicago, 1955), Ph.D. (Iowa, 1948); John D. Shelburne, M.D. (Duke, 1972); C. Craig Tisher, M.D. (Washington Univ., 1961); Frances King Widmann, M.D. (Case Western Reserve, 1960); Peter Zwadyk, Ph.D. (Iowa, 1971).

Adjunct Associate Professors: John A. Moore, D.V.M. (Michigan State, 1963); James A. Swenberg, D.V.M. (Minnesota, 1966), Ph.D. (Ohio, 1970).

Associate Clinical Professor: Doyle G. Graham, M.D. (Duke, 1966), Ph.D. (Duke, 1971).

Assistant Professors: Peter H. Anderson, Ph.D. (Oregon, 1972); Byron P. Croker, M.D., Ph.D. (Duke, 1971); Jane T. Gaede, M.D. (Duke, 1966); Hal K. Hawkins, M.D. (Duke, 1972), Ph.D. (Duke, 1971); Raymond E. Ideker, M.D. (Tennessee, 1974), Ph.D. (Tennessee, 1972); Kenneth McCarty, Jr., M.D. (Duke, 1972), Ph.D. (Duke, 1973); George Michalopoulos, M.D. (Athens, 1969), Ph.D. (Wisconsin, 1977); Salvatore Pizzo, M.D. (Duke, 1972), Ph.D. (Duke, 1973); Sandra H. Preissig, M.D. (Tennessee, 1971); Keith A. Reimer, M.D. (Northwestern, 1972), Ph.D. (Northwestern, 1971); Frank A. Sedor, Ph.D. (Florida, 1971); Robin T. Vollmer, M.D. (Duke, 1967); Robert S. Waite, M.D., Ph.D. (Duke, 1975).

Assistant Medical Research Professor: Carol W. Lewis, Ph.D. (North Carolina at Chapel Hill, 1972).

Adjunct Assistant Professors: Arnold R. Brody, Ph.D. (Colorado, 1969); Donald F. Calbreath, Ph.D. (Ohio, 1968); Ralph C. McCoy, M.D. (Emory, 1967).

Associates: Patricia Ruth Ashton, A.B. (Goucher, 1963); Kenneth R. Broda, Ph.D. (Duke, 1977); J.E. Phillip Pickett, H.T.; Margaret C. Schmidt, M.A. (Louisville, 1969).

Research Associates: Mary LuSan Hill; Lieselotte Kemper; Ann Lefurgey, Ph.D. (North Carolina at Chapel Hill, 1976); Eileen Mikat, M.A. (Duke, 1969); Richard Serano, M.D. (Virginia, 1973).

## Required Course

PTH-200—the core course in pathology—is given during the second term of the first year. Fundamentals of pathology are presented by correlating gross and microscopic material to illustrate the structural changes in disease. Lectures dealing with broad concepts of disease processes are presented by senior faculty, and conferences with small groups of students are held under the guidance of staff members. Etiology and pathogenesis of disease, as well as the experimental approach are emphasized for the purpose of correlation with clinical disease. In addition to group work, conferences are scheduled to discuss problems derived from autopsies. Students are required to collaborate in postmortem studies and present cases in clinical-pathologic conferences under the direction of the staff.

## Electives

**PTH-201(B).\*** **The Pathologic Basis for Clinical Medicine.** Disease processes will be studied in terms of organ systems, with the intention of enabling students to crystallize the basic processes studied in Pathology 200. Clinicopathologic correlation will be stressed, utilizing gross and microscopic examples of disease processes, case studies, lectures, and demonstrations. This is a survey course and does not treat any one subject in great depth. Term: 1. Weight: 4. *Hackel and staff*

**PTH-203(B).\*** **Ophthalmic Pathology.** This course is designed for students with an interest in ophthalmic diseases and particularly for those planning a career in pathology or ophthalmology, and will consist of lectures, seminars, and laboratory sessions. The normal anatomy and embryology of the eye will be reviewed, and the various reactions of the eye to injury will be studied in gross and microscopic specimens. The more common diseases will be considered in detail. Term: 1. Weight: 3. *Klintworth*

**PTH-207(B).** **Cytopathology Preceptorship.** This course consists of a full-time rotation by the student in the diagnostic cytopathology laboratories. By working with the laboratory staff, the student will explore in detail the role played by exfoliative cytopathology in the diagnosis of disease. Although not a requirement, the student will be encouraged to pursue special research projects. Term: all except the regular term 1. Weight: 8. *Johnston, Bossen, Preissig, and staff*

**PTH-223(B).** **Autopsy Pathology.** The course is intended to introduce students to the autopsy as an investigative tool; anatomic-clinical correlation is emphasized. Students work directly with one or more members of the Pathology Department. They will first assist at autopsies and then perform autopsies under supervision. They will work up these cases with particular attention to correlations with clinical and experimental medicine, prepare the final autopsy reports on them, and will work essentially at the level of a house officer. Students will be expected to present their findings at staff conferences. If the course is oversubscribed, the students will be chosen by lot. Every term. Weight: 8. *Adams and staff*

**PTH-225(B).\*** **Cardiovascular Pathology.** Cardiovascular disease processes will be studied, reviewing anatomic, embryologic, and physiologic features, and utilizing case material and gross specimens. Clinicopathologic correlation will be stressed. Term: 1. Weight: 2. *Hackel, Reimer, and Ideker*

**PTH-237(B).** **Surgical Pathology.** This course is designed for the student who wishes more experience in the study of disease. Although the course is entitled *Surgical Pathology*, this does not imply interest solely in the individual oriented to surgery. Problems in dermatology, gynecology, orthopaedics, general surgery, internal medicine, and other specialties will be considered. The program of study will consist of lectures, demonstrations, and laboratory work. Microscope required (limited number available on loan). Term: 4. Weight: 4. *Fetter*

**PTH-342(B).** **Special Topics in Pathology.** Special problems in pathology will be studied with a member of the senior staff; the subject matter will be individually arranged. Permission of instructor required. Every term. Weight: 1-8 per 8 weeks. *Jennings and staff*

**PTH-346(B).\*** **Subcellular and Molecular Pathology.** This course is designed for students wishing to broaden their knowledge of cellular structure and cellular pathology. A series of lectures and seminars will be presented on the alterations in cellular structure and associated function that accompany cell injury. Ultrastructural changes in selected human diseases will be discussed in detail with



emphasis on diagnosis and pathogenesis. Terms: 1 and 2. Weight: 2. *Hawkins, Jennings, Shelburne, and Sommer*

**PTH-348(B). Practical Surgical Pathology.** This course will be in the form of an apprenticeship in which the student will work closely with the resident in the actual preparation and diagnosis of tissue changes. Microscope required (limited number available on loan). Every term. Weight: 8. *Fetter and staff*

**PTH-353(B).\* Neuropathology.** A view of neuropathology that emphasizes clinicopathologic correlation. Term: 1. Weight: 3. *Vogel and staff*

**PTH-359(B).\* Fundamentals of Electron Microscopy.** Emphasis will be placed on the theory and application of electron microscopy to ultrastructural pathology. The methods relating to electron microscopy, as well as phase and polarization microscopy, will be considered. Laboratory experience will be included. Terms: 1 and 2. Weight: 2. *Shelburne, Sommer, and Hawkins*

**PTH-362(B).\* Pathology of the Kidney.** This course is a comprehensive study of pathological, immunological, and clinical features of the various types of glomerulonephritis, nephrotic syndrome, and pyelonephritis, as well as of metabolic, congenital, and neoplastic renal disorders. Lectures will be supplemented with gross and microscopic specimens, demonstrations, clinico-pathological discussions and student seminars. Term: 2. Weight: 3. *Tisher, McCoy, and Croker*

**PTH-364(B). Orthopaedic Pathology.** Special problems in orthopaedic pathology will be dealt with beginning with a discussion of the development of connective tissue with special emphasis on bone and muscle. Bone tumors, metabolic diseases, and traumatic problems will be considered. Term: 4. Weight: 2. *Harrelson*

**PTH-366(B).\* Pulmonary Pathology and Postmortem Pathophysiology.** Emphasis will be on pulmonary pathology and pathophysiology of infectious, metabolic, environmental, and neoplastic diseases, and certain diseases of unknown etiology (e.g. sarcoid, alveolar proteinosis, etc.). Ventilatory experiments will be done on excised human lungs. Term: 2. Weight: 3. *Pratt*

**PTH-368(B). Seminar in Neonatal and Pediatric Pathology.** This is a seminar course covering specific topics in developmental anatomy and major pathologic processes of the brain, lung, gastrointestinal, and urinary tracts. Emphasis will be on gross, microscopic pathology, and clinicopathologic correlation. These students will assume responsibility for presentations of material in individual seminars. Designed for students entering pathology and clinical pediatrics. Term: 3. Weight: 2. *Bradford*

**PTH-371(B). The Laboratory Basis for Clinical Medicine.** This course will emphasize evaluation and interpretation of laboratory data relative to pathophysiologic processes. Development of judgment and selectivity in utilizing laboratory tests will be taught. Course will consist of lectures and conferences. Clinicopathologic correlation will be stressed by detailed case studies of specific patients. Term: 4. Weight: 2. *Gaede, Widmann, Pratt, Anderson, and Zwadyk*

**PTH-372(B). Environmental Diseases.** The course features guest lecturers and student presentations to cover examples of disease produced by technological exploitation of the earth and "life study." Subjects include population, respiration-air and ocean, and examples of diseases due to asbestos, lead, mercury, hydrocarbons, carcinogens, organic dusts, DDT, cigarette smoke, etc. Term: 3. Weight: 2. *Pratt and Lynn*

**PTH-374(B).\* Pulmonary Structure and Function Seminar.** Current and exemplar pathological material on lungs, including gross, histologic, and electron



microscopic data, is correlated with *in vitro* function and clinical features; physiological measurements; and roentgenographic findings. The structural features of the types of reaction of lung cells to injury are interpreted against this background. Such demonstration material is correlated by lectures. Every term. Weight: 1. Pratt and Lynn

**PTH-375(B). \* Immunopathology.** A study of the patho-anatomy of diseases of man in which the immune system plays an important role, including autoimmune diseases, the "collagen diseases," graft rejection, and immunologic aspects of cancer. The format will consist of a series of lectures on the clinicopathological changes seen in immunopathological diseases of man. Term: 4. Weight: 1. Daniels, Adams, Bigner, and Bossen

**PTH-376(B). \* Pathology of Virus Infections.** In this course the pathological effects of viruses will be discussed. The format will consist of a series of student-oriented seminars and microscopic studies of human case materials. The clinical, pathological, immunological, and epidemiological aspects of human virus diseases will be stressed. Terms: 1 and 2. Weight: 3. Daniels

**PTH-378(B). Seminars in Hematology.** This is a systematic survey of the pathophysiology and morphology of human hematological diseases. Each student will survey the literature on several topics and prepare an oral presentation which will be critically discussed by the group. Opportunity for experience in blood, marrow, and lymph node analysis will be available. Term: 3. Weight: 2. Wittels

**PTH-380(B). Surgical Pathology with Emphasis on Electron Microscopy.** This course will be in the form of an apprenticeship in which the student will become engaged in the actual preparation and diagnosis of tissue changes using both light and electron microscopy. The student will, of necessity, learn how to operate the electron microscope. Terms: 1, 2 and 4; Summer Terms I and II. Weight: 8. Shelburne and Vollmer

**PTH-385(B). \* Interdisciplinary Seminar in Cancer Research.** Emphasis will be on cellular biology of the cancer cell. The instructors will present topics on aspects of cancer research and will attempt to correlate them with the biologic and clinical behavior of specific forms of neoplasia. Terms: 3 and 4. Weight: 4. Michalopoulos and Falletta

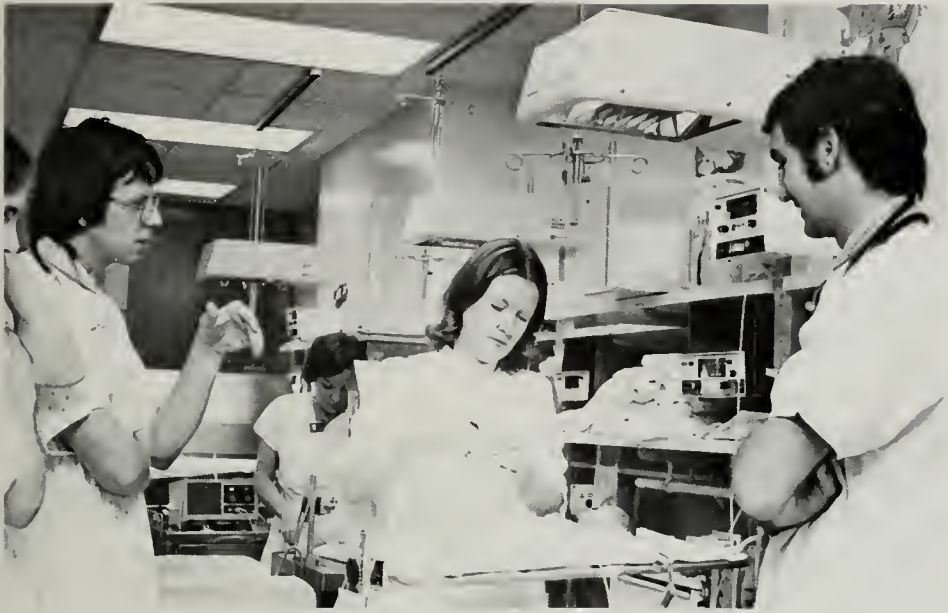
## Pediatrics

Wilbur C. Davison Professor: Samuel L. Katz, M.D. (Harvard, 1952), *Chairman*.

Professors: Jay M. Arena, M.D. (Duke, 1932); George W. Brumley, M.D. (Duke, 1960); Rebecca H. Buckley, M.D. (North Carolina at Chapel Hill, 1958); Susan C. Dees, M.D. (Johns Hopkins, 1934); Thomas E. Frothingham, M.D. (Harvard, 1951); Herman Grossman, M.D. (Columbia, 1953); James B. Sidbury Professor Jerome S. Harris, M.D. (Harvard, 1933); David J. Lang, M.D. (Harvard, 1958); James B. Sidbury, Jr., M.D. (Columbia, 1947); Madison S. Spach, M.D. (Duke, 1964); Alexander Spock, M.D. (Maryland, 1955).

Associate Professors: Page A. W. Anderson, M.D. (Duke, 1963); Roger C. Barr, Ph.D. (Duke, 1968); Lillian Blackmon, M.D. (Arkansas, 1963); M. Carlyle Crenshaw, M.D. (Duke, 1956); John M. Falletta, M.D. (Kansas, 1966); Howard Filston, M.D. (Western Reserve, 1962); Laura T. Gutman, M.D. (Stanford, 1963); Stuart Handwerger, M.D. (Maryland, 1964); David F. Merten, M.D. (Cincinnati, 1956); Charles R. Roe, M.D. (Duke, 1964); Stanley J. Rothman, M.D. (McGill, 1965); Catherine M. Wilfert, M.D. (Harvard, 1962).

Assistant Professors: D. Woodrow Benson, M.D., Ph.D. (Duke, 1972); William D. Bradford, M.D. (Western Reserve, 1958); Jane E. Brazy, M.D. (Washington Univ., 1972); Rosalind Coleman, M.D. (Western Reserve, 1969); Sam Edwards, M.D. (Duke, 1968); Peter C. English, M.D., Ph.D. (Duke, 1975); John A. Fowler, M.D. (Bowman Gray, 1946); Stephen Gehlbach, M.D. (Western Reserve, 1968); Roberta S. Gray, M.D. (North Carolina at Chapel Hill, 1972); Steven Gross, M.D. (Maryland, 1973); Seymour Grufferman, M.D. (State Univ. of New York, Syracuse, 1964); Harold J. Harris, M.D. (Long



Island Coll. of Med., Brooklyn, 1949); Robert H. Hock, Ph.D. (Miami, 1976); Ziad H. Idriss, M.D. (Amer. Univ. of Beirut, Lebanon, 1970); J. David Jones, M.D. (Duke, 1954); Sue Y. S. Kimm, M.D. (Yale, 1964); Thomas R. Kinney, M.D. (Duke, 1970); Deborah W. Kredich, M.D. (Michigan, 1962); Ronald P. Krueger, M.D. (Duke, 1954); Darrell V. Lewis, M.D. (Minnesota, 1969); Mary Ann Morris, M.D. (Arkansas, 1972); Stephen G. Osofsky, M.D. (Northwestern, 1969); Shirley K. Osterhout, M.D. (Duke, 1957); Dennis Ownby, M.D. (Med. Coll. of Ohio, Toledo, 1972); Talmage Peele, M.D. (Duke, 1934); M. Henderson Rourke, Jr., M.D. (Pennsylvania, 1963); Gerald A. Serwer, M.D. (Duke, 1971); Raymond A. Sturner, M.D. (Georgetown, 1968); Robert J. Thompson, Jr., Ph.D. (North Dakota, 1971); Kwan-Sa You, Ph.D. (Brandeis, 1971).

Associates: Ann R. Cantor, M.D. (California at San Francisco, 1971); Joanna S. Dalldorf, M.D. (Cornell, 1958); Paula DeRemer, Ph.D. (Purdue, 1978); Donald R. Kirks, M.D. (Washington Univ. 1968); Aglaia N. O'Quinn, M.D. (Duke, 1965); Robert Ruderman, M.D. (Rochester, 1968).

Consultant and Lecturer: Angus M. McBryde, M.D. (Pennsylvania, 1928).

Clinical Professor: William J. A. DeMaria, M.D. (Duke, 1948).

Associate Clinical Professors: William L. London, M.D. (North Carolina at Chapel Hill, 1955); George M. Lyon, Jr., M.D. (Duke, 1961); A. W. Renuart III, M.D. (Duke, 1955); Evelyn Schmidt, M.D. (Duke, 1951); Bailey D. Webb, M.D. (Duke, 1946), Ph.D. (North Carolina at Chapel Hill, 1941).

Assistant Clinical Professors: Clarence Bailey, M.D. (North Carolina at Chapel Hill, 1955); Stephen Brown, M.D. (Harvard, 1966); William A. Cleland, M.D. (Howard, 1933); James S. Hall, M.D. (Duke, 1957); Alvin H. Hartness, M.D. (Bowman Gray, 1965); Richard S. Kelly, Jr., M.D. (Jefferson, 1945); Howard H. Loughlin, M.D. (Pennsylvania, 1970); Thomas M. McCutchen, M.D. (Vanderbilt, 1963); Nelle S. Moseley, M.D. (Med. Coll. of Georgia, 1957); Charles B. Neal, M.D. (Duke, 1955); John C. Pollard, M.D. (Virginia, 1968); William C. Powell, M.D. (Bowman Gray, 1952); Jimmie L. Rhyne, M.D. (Maryland, 1948); A. Douglas Rice, M.D. (Duke, 1951); Robert J. Senior, M.D. (Jefferson, 1955); Frank S. Shaw, M.D. (Pennsylvania, 1959); Charles I. Sheaffer, M.D. (Western Reserve, 1958); S. Winston Singleton, M.B. (Manchester, England, 1952); Fred R. Stowe, M.D. (North Carolina at Chapel Hill, 1958); W. Samuel Yancy, M.D. (Duke, 1965).

Clinical Associates: Lillis Altshuller, M.D. (Cincinnati, 1960); Joanne Barton, M.Sc. (Kentucky, 1974); Elizabeth Burkett, M.S.N. (North Carolina at Chapel Hill, 1975); Dennis A. Clements, M.D. (Rochester, 1973); Meade R. Christian, Jr., M.D. (Western Reserve, 1967); William G. Conley, M.D. (Med. Coll. of Virginia, 1960); W. LaDell Douglas, M.D. (Georgetown, 1974); Jean Findlay, M.B. (Aberdeen Univ. Med. Sch. Scotland, 1970); Johnny Gaston, M.D. (Med. Coll. of Ohio, 1974); Rufus McP. Herring, Jr., M.D. (Bowman Gray, 1969); Pierre Le Master, M.D. (Florida, 1971); Michael Nathan, M.D. (Duke, 1973); Jerri Oehler, M.S.N. (Virginia, 1970); James B. Rouse, M.D. (Duke, 1965); Janice Stratton, M.D. (Tulane, 1961); Joseph Whatley (Duke, 1958).

Research Associates: Victor German, M.D. (Pritzker, 1975) Ph.D. (Illinois, 1963); Helen Ownby, Ph.D. (Michigan, 1971).

Assistant Medical Research Professors: Patricia Baker, Ph.D. (Illinois, 1975); Kwok-Sing Cheung, Ph.D. (Saskatchewan, Canada 1971); Stephen R. Turner, Ph.D. (Duke, 1971).

## Required Course

PED-200—the basic course in pediatrics for all students—is an eight-week clerkship in the second year. Its principal aim is to provide an exposure to the field of child health. The student has a varying series of experiences which should give a grasp of the concepts that underlie the discipline. Goals should be to acquire familiarity and competence with the basic tools of information-gathering—the history, physical examination, and laboratory data—and to develop an approach to the integration of this material for the solution of problems of health and illness in infancy, childhood, and adolescence. This should be accomplished with continuing reference to the basic principles of pathophysiology encountered in the first year courses.

Those patients to whom the student is assigned will provide the focus for case studies. In addition to the careful history and physical examination which must be recorded, the student is expected to organize an appropriate differential diagnosis and to seek and read pertinent reference material relevant to each patient. The student should learn to present each case verbally in an organized and succinct fashion, to follow the patient's progress, and to interpret all studies which are performed. The student is expected to learn from a number of sources: standard textbooks and journals, current publications and conferences, and also from people—house staff, faculty, nurses, parents, and all others with whom contact is made in the clinical setting.

Objectives should also include an understanding of the roles played in pediatrics by other members of the health care team, both in the ambulatory and hospital settings. Patient care may include nurse, social worker, recreation therapist, psychologist, physiotherapist, dietitian, and/or others. The eight weeks will be divided to include time into the following settings: (a) outpatient clinics and emergency room, (b) Howland Ward, and (c) Durham County General Hospital and (d) nursery.

## Electives

**PED-201(C). General Pediatrics.** The senior student negotiates the schedule before the beginning of the course. There are a number of options ranging from inpatient clerkship and subinternships to community preceptorships. In the general appointment and walk-in clinics, the student may become acquainted with most of the common, primary care pediatric problems as well as causes for referral. Beyond the walls of the hospital, there are opportunities for the student to participate in child health activities in the community in collaboration with a variety of child-serving professionals, including practicing pediatricians, nurse practitioners, public health nurses, teachers, social workers, and mental health workers. Students are encouraged to select an area for in-depth examination, active participation and the preparation of a report according to their interests, backgrounds, and anticipated career goals. Examples of available areas are behavior-development, rheumatology, child health and many others. Every term except Summer Term II. Weight: up to 8. *General Pediatric staff. Dr. Kredich and staff*

**PED-202(C). Pediatric Infectious Diseases.** This course will provide experience in the clinical and laboratory diagnosis of infectious diseases and in their therapy. The student works closely with the infectious disease fellow and participates actively in evaluation of patients. There is opportunity to gain experience in a laboratory setting (bacteriology, virology). Every term. Weight: 4 or 8. *Lang, Frothingham, Gutman, Katz, Wilfert, and staff*

**PED-203(C). Pediatric Neurology.** Students will examine both hospitalized and ambulatory patients with neurological disorders. Emphasis is placed on the neurological history, examination and the investigation and management tech-



niques of nervous system disorders of childhood. Terms: 1, 2, 3, or 4. Weight: 8. *Rothman and staff*

**PED-215(C). Endocrine Disorders in Children.** Students see clinical endocrine patients by participating in the Pediatric Endocrine Clinics. Stress is placed upon application of hormone assay to the diagnosis of endocrine disorders in childhood. Every term. Weight: 4 or 8. *Handwerker, Morris, and Moseley*

**PED-217(C). Pediatric Hematology and Oncology.** Includes all aspects of clinical and laboratory pediatric hematology, as well as the diagnostic evaluation, care, and treatment of patients with malignant diseases. Emphasis will be placed on fundamental concepts. There will be daily ward rounds, three weekly clinics, conferences and seminars, as well as assigned reading. Students will be encouraged to engage in some individual clinical or laboratory project during the period of the course. Every term. Weight: 8. *Faletta and Kinney*

**PED-221(C). Poison Control.** Primarily a seminar course with one two-hour conference per week scheduled for student discussion on assigned topics. The student may participate in clinical functions of the center and may choose to be on call for the treatment of these cases in the emergency room or the ward. This is a student-oriented teaching program and individual projects on the subject may also be carried out. Terms: 1, 2, 3, or 4. Weight: 2. *Shirley Osterhout*

**PED-225(C). Neonatology.** Students will have patient care responsibilities and experiences in the Full-Term Newborn and Intensive Care Nurseries. Included will be discussions of prenatal hazards, resuscitation, and care of the normal newborn and premature infant. Emphasis is placed on the initiation of parent-child relationships and the management of the normal and stressed neonate. Every term. Weight: 4. *Blackmon, Brumley, Brazey, and Gross*

**PED-227(C). Behavioral Aspects of Pediatrics.** The purpose of this course is to provide training and experience in recognizing and managing the emotional reactions of children to medical illness. An integral aspect of this course will be clinical interviews with selected family members to determine the impact of serious pediatric illness on the emotional health and well being of family members. (See also PSC-227C.) Terms: 1, 2, 3, or 4; Summer Term I. Weight: 2-6. *Jones, Yancy, and Burns*

**PED-231(C). Clinical Pediatric Cardiology.** Provides an intensive learning experience in clinical childhood heart disease. Emphasis is placed on preoperative and postoperative management of children with operable heart disease. Scope: history, physical examination, and special techniques (electrocardiography, phonocardiography, echocardiography, cardiac catheterization, and cineangiocardiology). All students are required to meet with one of the instructors prior to enrolling in this course. Every term. Weight: 8, 4 (only with special permission of instructors). *Anderson, Benson, Edwards, Serwer, and Spach*

**PED-233(C). Allergy, Clinical Immunology, and Pulmonary Diseases.** Clinical evaluation and practice in use and methods of diagnosis and treatment of allergic disorders, cystic fibrosis, and other pulmonary diseases; immunologic deficiency states; and autoimmune disorders. Scope: history, physical examination, skin and pulmonary function tests, allergen preparation, sweat testing, and a variety of clinical immunologic tests. Every term. Weight: 4 or 8. *R. Buckley, S. Dees, Spock, Ownby, Rourke, and A. Spock*

**PED-239(C). Perinatal Medicine.** A study of factors during pregnancy, labor, delivery, and the first month of life. Emphasis will be placed on abnormal conditions of pregnancy as related to the infant, prenatal pathological conditions



adversely affecting the fetus and newborn, and early management of the infant. Current problems in maternal-fetal relationships will be outlined. The clinical rotation will consist of half time in the delivery room and half in the nursery (FTN and ICN). (See also OBG-239(C) and PED-225(C).) Every term. Weight: 8. *Perinatal Medicine Staff*

**PED-241(C). Pediatric Nephrology.** Course is designed to provide experience in diagnosis, interpretations of laboratory tests, natural history, and treatment of acute and chronic disorders of the kidney in children. Students are also exposed to the management of fluid and electrolyte disorders in infants and children. Every term. Weight: 4 or 8. *Osofsky and Gray*

**PED-243(C). Adolescent Medicine.** Students will see adolescents in outpatient clinic. Emphasis to be placed on the behavioral and developmental aspects of adolescence, drug abuse, and the pregnant teenager. Tutorial and supervisory time to discuss specific patients and pertinent literature will be arranged. Every term. Weight: 2. *Yancy*

## Pharmacology

Professors: Norman Kirshner, Ph.D. (Pennsylvania State, 1952), *Chairman*; Frederick Bernheim, Ph.D. (Cambridge University, 1928), *J. B. Duke Professor Emeritus*.

Professors: Leon Lack, Ph.D. (Columbia, 1953); Daniel B. Menzel, Ph.D. (California at Berkeley, 1962); Athos Ottolenghi, M.D. (Univ. of Pavia, 1946); Saul M. Schanberg, M.D. (Yale, 1964), Ph.D. (Yale, 1961); David G. Shand, M.D. (St. Bartholomew's Hospital Med. Coll., London, 1964); Pelham Wilder, Ph.D. (Harvard, 1950).

Associate Professors: James Norman Davis, M.D. (Cornell, 1965); Elliott Mills, Ph.D. (Columbia, 1964); Gerald M. Rosen, Ph.D. (Clarkson, 1969); Theodore Slotkin, Ph.D. (Rochester, 1970).

Assistant Professors: Mohamed Abou-Donia, Ph.D. (California at Berkeley, 1966); Thorir D. Bjornsson, M.D. (Univ. of Iceland, 1971); P. Michael Conn, Ph.D. (Baylor, 1976); Everett H. Ellinwood, M.D. (North Carolina at Chapel Hill, 1959); James C. Fuchs, M.D. (Johns Hopkins, 1964); Laura E. Gutman, M.D. (Stanford, 1962); Cynthia M. Kuhn, Ph.D. (Duke, 1975); Jeffrey D. Lazar, M.D. (Univ. of Heidelberg, 1973); Julian Victor Nadler, Ph.D. (Yale, 1972); Harold C. Strauss, M.D. (McGill, 1964); A. Richard Whorton, Ph.D. (Vanderbilt, 1975).

Medical Research Assistant Professors: Brij Shrivastav, Ph.D. (Univ. of Western Ontario, 1968).

Adjunct Professors: David L. Coffin, V.M.D. (Pennsylvania, 1938); Pedro Cuatrecasas, M.D. (Washington Univ., 1962); William Durham, Ph.D. (Emory, 1950); Gertrude Elion, D.Sc. (George Washington, 1969); Leon Golberg, D.Sc. (Univ. of Witwatersrand, 1946); George H. Hitchings, Ph.D. (Harvard, 1933); Robert A. Maxwell, Ph.D. (Princeton, 1954); Charles A. Nichol, Ph.D. (Wisconsin, 1949); Vladimir Petrow, D.Sc. (Univ. of London, 1947).

Adjunct Associate Professors: Herbert S. Posner, Ph.D. (George Washington, 1958); Humberto Viveros, M.D. (Univ. of Chile, 1962); Richard W. Welch, Ph.D. (Jefferson Medical Coll., 1962).

Adjunct Assistant Professors: Donald E. Gardner, Ph.D. (Cincinnati, 1971); Donald H. Namm, Ph.D. (Albany Med. School, 1965); Lawrence W. Reiter, Ph.D. (Kansas, 1970); Wilkie A. Wilson, Jr., Ph.D. (Duke, 1971).

## Required Course

**PHR 250. Pharmacology: Mode of Action of Drugs.** A basic course in pharmacology describing the action of drugs in terms of biochemical and physiological processes, and the rationale for their use in clinical therapy. Four lectures, one clinical correlation and one conference per week. Term: spring. 4 units. *Staff*

## Electives

**PHR-219(B). Tutorial in Pharmacology.** Guided independent study of original literature and/or laboratory experience. Open to all students; required of those electing a preclinical base in the Department of Pharmacology. Every term. Weight: 3 per 8 weeks. *Staff*

**PHR-256(B). Human Nutrition.** Nutrition principles with emphasis on physiology and pharmacology. Topics will include the chemical basis for nutrient requirements, application to practical diets, parenteral nutrition, influence of dietary intake on disease (cardiovascular disease, diabetes, and inborn errors of metabolism), optimal dietary intake, impact of food technology on human nutrition, growth, maturation, lactation, and their requirements and recent advances in micronutrient requirements. Terms: not offered in 1979-80. Weight: 2. *Menzel and Abou-Donia*

**PHR-270(B).\* Neurobiology 1.** Interdisciplinary approach to neuronal function at the cellular and molecular levels. Topics will include: Subcellular structural organization, physiology and pharmacology of excitable membranes, impulse generation and conduction, neurotransmitters, proteins, pre- and postsynaptic organization and function. Terms: 1 and 2. Weight: 3. *Moore, Kirshner, Robertson, and Mendel*

**PHR-271(B).\* Neurobiology 2.** An integrated view of the central nervous system taught by members of the departments of anatomy, pharmacology, physiology, and psychology. Sensory systems; motor system; sleep and alerting; transmitters and behavior; pathologic discharges; evolutionary and comparative aspects. Terms: 3 and 4. Weight: 4. *Somjen and staff*

**PHR-330(B). Pharmacological Basis of Clinical Medicine.** This course consists of a detailed analysis of the mechanism of action and rationale for use of pharmacologic agents in disease states. Terms: 1-2. Weight: 4 per 16 weeks. *Schanberg and staff*

**PHR-331(B).\* Laboratory Methods in Pharmacology.** Tutorial laboratory training will be given in various fields of pharmacology, including neuropharmacology, cardiovascular pharmacology, biochemical pharmacology, and biophysical pharmacology. Certain special laboratory sessions will be conducted at the Wellcome Research Laboratories, Research Triangle Park. Every term. Weight: 3 per 8 weeks. *Staff*

**PHR-333(B).\* Principles of Pharmacology and Toxicology 1.** Drug absorption, distribution, excretion and metabolism, basic and clinical pharmacokinetics, Hansch correlation of structure and activity, stereo-chemistry, and drug action. Terms: 1 and 2. Weight: 3. *Slotkin and staff*

**PHR-334(B).\* Principles of Pharmacology and Toxicology 2.** Drug receptor theory and its practical applications, pharmacokinetics and pharmacodynamics of toxic substances, mechanisms of toxicity, adverse drug reactions, and interactions. Terms: 3 and 4. Weight: 3. *Rosen, Menzel, and staff*

**PHR-335(B).\* Drug Receptor Theory.** The course is divided into three sections—the development of receptor theory from the standpoint of kinetic models; the adaptation of theory to the qualitative evaluations of receptors by biochemical, physiological and pharmacological criteria; and the use of these theories in the prediction of receptor properties. The receptors of the autonomic nervous system and hormone responsive cells will be emphasized. Terms: 1 and 2. Weight: 2. *Rosen*

**PHR-354(B).\* Mammalian Toxicology.** Principles of toxicology as related to man. Emphasis will be placed on the molecular basis for toxicity of chemical and physical agents. Subjects will include the limitations and assumptions of extrapolation to man from animal toxicity, safety of drugs and food additives, toxicity of pesticides and their hazard to man, and the role of scientists in societal decisions on

the use of man-made chemical and physical agents. Terms: 1 and 2. Weight: 3  
*Menzel, Abou-Donia, and staff*

**PHR-360(B). Neuropharmacology.** Central and peripheral transmitter mechanisms and their control; mechanisms of action of drugs used to modify nervous system function; interactions of neural and endocrine systems. Terms: 1 and 2. Weight: 3. *Nadler*

**PHR-417(B).<sup>\*</sup> Cellular Endocrinology.** Current concepts of the mechanism of action of hormones at the cellular level, including hormone-receptor interactions; secondary messengers; regulation of protein synthesis; growth and differentiation; control of salt and water balance; regulation of substrate and mobilization; and modulation of hormone secretion (Also listed as PHS-417(B).) Terms 1-2. Weight: 2 per 16 weeks. *Lebovitz and staff*

## Physiology

Professor: Edward A. Johnson, M.D. (Univ. of Sheffield, 1953), *Chairman*

Professors: Jacob J. Blum, Ph.D. (Chicago, 1952); Irving T. Diamond, Ph.D. (Chicago, 1953); Frans F. Jöbsis, Ph.D. (Michigan, 1958); Peter K. Lauf, M.D. (Univ. of Freiburg, 1960); Melvyn Lieberman, Ph.D. (State Univ. of New York, 1964); John W. Moore, Ph.D. (Virginia, 1954); John V. Salzano, Ph.D. (Iowa, 1956); George G. Somjen, M.D. (New Zealand, 1961); Madison S. Spach, M.D. (Duke, 1954).

Associate Professors: Nels C. Anderson, Ph.D. (Purdue, 1964); Peter B. Bennett, Ph.D. (Univ. of Southampton, 1964); Robert P. Erickson, Ph.D. (Brown, 1958); Joseph C. Greenfield, M.D. (Emory, 1956); John W. Gutknecht, Ph.D. (North Carolina at Chapel Hill, 1963); J. A. Kylstra, M.D. (Leiden, Holland, 1952); Harold Lebovitz, M.D. (Pittsburgh, 1956); Thomas J. McManus, M.D. (Boston, 1955); Lazaro J. Mandel, Ph.D. (Pennsylvania, 1969); Lorne Mendell, Ph.D. (Massachusetts Inst. of Tech., 1965); Elliott Mills, Ph.D. (Columbia, 1964); George M. Padilla, Ph.D. (California at Los Angeles, 1960); Myron Wolbarsht, Ph.D. (Johns Hopkins, 1958).

Assistant Professors: Page A.W. Anderson, M.D. (Duke, 1963); Evan Evans, Ph.D. (California at San Diego, 1970); Stuart Handwerker, M.D. (Maryland, 1964); Franklin G. Hempel, Ph.D. (Texas, 1969); R. Scott Jones, M.D. (Texas, 1961); Fidel Ramon, M.D. (Univ. of Mexico, 1964); David W. Schomberg, Ph.D. (Purdue, 1965); Sidney Simon, Ph.D. (Northwestern, 1973); Howard Wachtel, Ph.D. (New York Univ., 1967); Andrew G. Wallace, M.D. (Duke, 1959); Andrew Wechsler, M.D. (State Univ. of New York, 1964); William E. Yarger, M.D. (Baylor, 1963).

Assistant Medical Research Professors: Gilbert Baumann, Dr.Sc. (Swiss Federal Inst. of Tech., 1968); Ping Beall, Ph.D. (Tulane, 1967); Michael Hines, Ph.D. (Chicago, 1975); Andres Manring, Ph.D. (Ohio, 1970); Young S. Kim, Ph.D. (Hawaii, 1971); Russell T. Snow, Ph.D. (Duke, 1971); Avis Sylvia, Ph.D. (North Carolina at Chapel Hill, 1973); Jose Torre-Bueno, Ph.D. (Rockefeller, 1975).

Associates: Fred Cobb, M.D. (Mississippi, 1964); Vincent Dennis, M.D. (Georgetown, 1966); Peter G. Kaufman, Ph.D. (Chicago, 1971).

Adjunct Associate Professor: James M. Schooler, Jr., Ph.D. (Wisconsin, 1964).

Adjunct Assistant Professors: Reginald D. Carter, Ph.D. (Bowman Gray, 1970); Russell Horres, Ph.D. (Duke, 1975); Philip A. McHale, Ph.D. (Duke, 1975).

Adjunct Associate: Thomas W. Anderson, Ph.D. (Duke, 1971).

## Required Course

**PHS-200—Introduction to the Physiology of Man.** Lectures and conferences on cell and organ physiology. Human and medical aspects are stressed in clinical conferences and in laboratory experience. The neurophysiology section is given in a three-week period following the end of the semester. Required of first-year medical students; limited to other students whose training requires knowledge of human physiology as it pertains to medicine. Three lectures, two conferences, and one laboratory per week. Prerequisite: consent of course leader. Term: fall. 5 units. *Somjen and staff*

## Electives

**PHS-207(B). The Heart and Peripheral Circulation in Health and Disease.** Physiology in the organ systems level, including cardiac electrophysiology and



mechanics, arrhythmias, ventricular-atrial function, congenital disordered function, coronary blood flow, and cardiovascular control mechanisms. Not offered for graduate school credit. Designed to be most valuable to the medical student as part of a coordinated program of study such as the Cardiovascular Study Program. Terms: 1 and 2. Weight: 2. *Anderson, Greenfield, Spach, Strauss, and Johnson*

**PHS-208(B). Respiratory System in Health and Disease.** Primary emphasis is on the physiology of respiration. Topics covered include pulmonary mechanics; gas exchange; ventilation-perfusion relationships; central and peripheral regulation of ventilation; and respiratory responses to exercise, altitude, and hyperbaric environments. Terms: 3 and 4. Weight: 2. *Salzano and Kylstra*

**PHS-212(B). \* Membrane Physiology and Osmoregulation.** Physiology of aquatic and terrestrial organisms, with emphasis on fluid and electrolyte balance, membrane transport processes and electrophysiology. The course includes lecture and laboratory work on the functions, mechanisms, and comparative aspects of ionic and osmotic regulation. Term: Summer Term II. Weight: 9 per 8 weeks. *Gutknecht and staff*

**PHS-215(B). \* Topics in Developmental Physiology.** An analysis of physiological basis of development at the organ level with special reference to vertebrates. Topics will include cardiogenesis and hormonal regulation in organogenesis. Terms: 3 and 4. Weight: 2 per 16 weeks. Not offered in 1979-80. *Lieberman and Padilla*

**PHS-216(B). \* Contractile Processes.** Cellular and molecular bases of activity in cilia and skeletal, cardiac, and smooth muscle; submicroscopic structure and behavior of muscle; electrical and ionic properties of muscle membranes; the problem of elector-mechanical coupling; mechanics and thermodynamics of muscular contraction; biochemical energetics of contraction; modern methods and problems in contractility research. Also listed as ANA-215(B). \* Terms: 1-2. Weight: 3 per 16 weeks. *Jöbsis, Johnson, Anderson, and Reedy*

**PHS-217(B). \* Membrane Transport.** The physical-chemical basis of ion transport in water and thin lipid films, the solution and application of transport equations, the chemical composition and ultrastructure of biological membranes, the characteristics of nonelectrolyte, anion, and cation transport in red blood cells including passive and active carrier transport, the integration of these processes to transport molecules across epithelial tissues, and the use of noise measurements to investigate possible mechanisms of voltage dependent conductances. Terms: 1 and 2. Weight: 3 per 16 weeks. *Lauf, Mandel, and Simon*

**PHS-219(B). Tutorial in Physiology.** Guided independent study of original literature and/or laboratory experience. Open to all students; required of those electing a preclinical base in the Department of Physiology. This tutorial must not be considered as replacement for any other course. It should provide an in-depth experience in an area related to any course or interest rather than being of a remedial nature. Every term. Weight: 3 per 8 weeks. *Lauf and staff*

**PHS-260(B). \* Physiology of Cell Growth and Differentiation in Health and Disease.** Lectures and discussions based on an extensive literature survey on the regulation of growth and the cell cycle of eukaryotic cells. Emphasis is on the physiological mechanisms which underly cellular proliferation, cell renewal, and the functionality of subcellular organelles in health and disease. Terms: 3-4. Weight: 3. *Padilla*

**PHS-270(B). \* Neurobiology 1.** Interdisciplinary approach to neuronal function at the cellular and molecular levels. Topics will include: subcellular structural



organization, physiology and pharmacology of excitable membranes, impulse generation and conduction, neurotransmitters, proteins, pre- and postsynaptic organization and function. Terms: 1 and 2. Weight: 3. *J.W. Moore, Kirshner, Robertson, Mendell, and Corless*

**PHS-271(B).\*** **Neurobiology 2.** An integrated view of the central nervous system, taught by members of the Departments of Anatomy, Pharmacology, Physiology, and Psychology. Sensory systems; motor system; sleep and alerting; transmitters and behavior; pathologic discharges, evolutionary and comparative aspects. Terms: 3 and 4. Weight: 3. *Somjen*

**PHS-301(B).\*** **Oxygen and Physiological Function.** The interrelations between oxidative metabolism and cell and organ function will be treated. The control systems for oxygen utilization and delivery will be emphasized. Organ function and dysfunction in hypoxia and oligemia will be discussed in terms of cellular events. Terms: 1 and 2. Weight: 3. *Jöbsis, Mandel, Snow, and Sylvia*

**PHS-320(B).** **Gastrointestinal Physiology.** In this course the normal physiology, mechanisms of control, and transport characteristics of the human gastrointestinal tract and its associated glands (salivary, pancreas, liver) are presented in a series of lectures, problems, and demonstrations. The mechanisms of secretion and reabsorption are treated at a cellular level. Problems focus on quantitation of gastrointestinal function. Term: 3. Weight: 2 per 8 weeks. *Jones, Anderson, and Mandel*

**PHS-321(B).\*** **Renal Physiology.** The composition and size of body fluid compartments and the regulation of the constituents of the plasma by the kidney is presented by lectures, problems, and demonstrations. Measurements of renal function including renal blood flow, tubular reabsorption and secretion, and acid-base regulation are discussed together with the theory of counter current exchange, ion transport in the kidney and hormonal control of renal function. Term: 4. Weight: 2 per 8 weeks. *Yarger and Dennis*

**PHS-362(B).\*** **Current Topics in Cardiac Muscle Physiology.** Selected topics in the physiology and pharmacology of adult and embryonic cardiac muscle, including general and comparative morphology and ultrastructure, cardiac electrophysiology and mechanics, and excitation-contraction coupling. Terms: 3-4. Weight: 2 per 16 weeks. *Johnson and staff*

**PHS-372(B).\*** **Research in Physiology.** Laboratory investigation in various areas of physiology. Every term. Weight: 2-8 per 8 weeks. *Lauf and staff*

**PHS-383(B).\*** **Physiological Instrumentation.** Electronic methods of measurement of physiological variables. The operational amplifier is used as the active building block in appropriate feedback circuits containing only passive elements to make a wide range of linear instruments including analog computers. Non-linear feedback circuits allow digital logic and computing elements are to be developed. Terms: 3 and 4. Weight: 3 per 16 weeks. *Moore and staff*

**PHS-401(B).\*** **Metabolic and Developmental Physiology.** The control of gluconeogenesis, protein degradation, the storage and mobilization of glycogen and of lipids will be examined both at cellular level (e.g., metabolite compartmentation, futile cycling, enzyme modification) and in terms of interactions between tissues such as liver, kidney, and muscle. Strategies for metabolic adaptation to exercise, cold environment, starvation, obesity, and birth will be discussed. Terms: 1 and 2. Weight: 3 per 16 weeks. *Blum*

**PHS-411(B).** **Molecular and Cellular Bases of Development and Differentiation.** Emphasis is placed on the biochemistry of the cell surface as the



basis of cell recognition, control of cell cycle, and overall tissue organization. An analysis of protein nucleic acid interactions in chromosome structure and function are considered in light of newer concepts of transcriptional and translational control. Studies also include nuclear cytoplasmic interactions as well as hormone induction of differentiation and development. The course is designed to study the phenomena of development and differentiation and has been organized on a multidisciplinary level. The course is part of the lecture series of development and differentiation study program, DDS-201(B). Terms: 1 and 2. Weight: 3-4. Padilla, McCarty, Counce, and Kaufman

**PHS-416(B). \* Biophysics and Excitable Membranes.** Advanced quantitative approach to bioelectric membrane phenomena. Topics include the cable properties of axons, voltage clamping theory and techniques, the ionic mechanisms of

excitation, mechanisms, models of membranes and neurons, and the pharmacology of excitable membranes. Terms: 1 and 2. Weight: 3 per 16 weeks. Will not be offered in 1979-80. *Moore and staff*

**PHS-417(B). \* Cellular Endocrinology.** Current concepts of the mechanism of action of hormones at the cellular level, including hormone-receptor interactions, secondary messengers, regulation of protein synthesis, growth and differentiation, control of salt and water balance, regulation of substrate storage and mobilization, and modulation of hormone secretion. Terms: 1 and 2. Weight: 2 per 16 weeks. *Lebovitz, Handwerker, and staff*

**PHS-418(B). \* Reproductive Biology.** An in-depth study of male and female reproductive processes including neuroendocrine, pituitary and gonadal control mechanisms, as well as the physiology of pregnancy and parturition. The basic lecture material in each section of the course is followed by seminar presentations by students and guest clinical faculty with emphasis on the interface between basic and clinical aspects. (Also listed as ANA-418(B). \*). Terms: 3 and 4. Weight: 2. *Anderson, Schomberg, and Tyrey*

## Psychiatry

Professor: H. Keith H. Brodie, M.D. (Columbia, 1965), *Chairman*.

### DIVISION OF CHILD AND ADOLESCENT PSYCHIATRY

Professor: John A. Fowler, M.D. (Bowman Gray, 1946), *Head of Division*.

Visiting Research Professor: Robert Coles, M.D. (Columbia, 1954).

Associate Professors: Harold J. Harris, M.D. (Long Island Med. Coll., 1949); J. David Jones, M.D. (Duke, 1954); Charles R. Keith, M.D. (Harvard, 1961).

Assistant Professors: Marcelino Amaya, M.D. (Univ. Nacional Autonoma de Mexico, 1954); William B. Anderson, M.D. (Minnesota, 1948).

Assistant Clinical Professors: Cesar Guajardo, M.D. (Univ. de Nuevo Leon, Mexico, 1961); W. Sam Yancey, M.D. (Duke, 1961).

Clinical Associates: Lucy T. Davis, Ed.D. (Columbia, 1955); William Mackey, M.D. (Tennessee, 1969); Donald L. Rosenblitt, M.D. (Duke, 1973); Jean G. Spaulding, M.D. (Duke, 1972).

Instructors: Muki Fairchild, M.S.W. (North Carolina at Chapel Hill, 1976); Alice F. Long, M.A. (Chicago, 1953).

Clinical Instructors: Barbara Denny, M.S.W. (North Carolina at Chapel Hill, 1975); Etta Leathers, M.E. (North Carolina Central, 1974).

### DIVISION OF COMMUNITY AND SOCIAL PSYCHIATRY

Associate Professor: Charles E. Llewellyn, Jr., M.D. (Med. Coll. of Virginia, 1946), *Head of Division*.

Professors: Kurt Back, Ph.D. (Massachusetts Inst. of Tech., 1949); George L. Maddox, Ph.D. (Michigan, 1956); Frederick T. Melges, M.D. (Columbia, 1961); Erdman B. Palmore, Ph.D. (Columbia, 1959).

Associate Professors: James H. Carter, M.D. (Howard, 1966); Jacquelyne J. Jackson, Ph.D. (Ohio, 1960).

Assistant Professors: Linda K. George, Ph.D. (Duke, 1975); Kenneth Rockwell, M.D. (Duke, 1961).

Assistant Clinical Professor: Khalil Tanos, M.D. (American Univ. of Beirut, 1972).

Associate: Jane Clark Moorman, M.S.W. (Tulane, 1971).

Clinical Associate: James O. Hoover, M.D. (Iowa, 1966).

Lecturers: James W. Osberg, M.D. (Tufts, 1948); Robert Rollins, M.D. (Duke, 1956); N. P. Zarzar, M.D. (American Univ. of Beirut, 1956).

Research Associates: Gerda Fillenbaum, Ph.D., (London, 1966); Jimi Herman, M.A. (Northern Colorado, 1976); Richard Landerman, Ph.D. (Duke, 1978); Lawrence Wallman, M.A. (Duke, 1976); John Walter, M.A. (Michigan, 1975).



## DIVISION OF BIOLOGICAL PSYCHIATRY

Professor: William P. Wilson, M.D. (Duke, 1947), *Head of Division*.

Professors: H. Keith H. Brodie, M.D. (Columbia, 1965); Everett H. Ellinwood, Jr., M.D. (North Carolina at Chapel Hill, 1959); Robert L. Green, Jr., M.D. (Hahnemann, 1946); William K. Zung, M.D. (Texas, 1961).

Clinical Professor: Richard J. Wyatt, M.D. (Johns Hopkins, 1964).

Associate Professors: Jonathan Davidson, M.D. (Univ. Coll., London, 1976); C. William Erwin, M.D. (Texas, 1960); John L. Sullivan, M.D. (Johns Hopkins, 1969).

Assistant Professor: Ronald J. Taska, M.D. (Baylor, 1973).

Clinical Associate: Bennett Leventhal, M.D. (Louisiana, 1974).

Research Associate: Robert Abarno, M.A. (Goddard, 1977).

Medical Research Associate: Richard Weiner, M.D., Ph.D. (Duke, 1973).

## DIVISION OF HIGHLAND HOSPITAL

Assistant Professor: Jack W. Bonner III, M.D. (Southwestern, 1965), *Head of Division*.

Associate Professor: Darwin Dorr, Ph.D. (Florida State, 1969).

Assistant Professors: Leo Potts, M.D. (Adelaide, Australia, 1955); Charles K. Prokop, Ph.D. (Texas Tech., 1977).

Assistant Clinical Professors: Louis A. Cancellaro, M.D. (Duke, 1965); Robert W. Gibson, Jr., M.D. (Boman Gray, 1968); Hal G. Gillespie, M.D. (Med. Coll. of South Carolina, 1964); Robert E. Huffman, M.D. (Tennessee, 1963); Anne E. Sagberg, M.D. (Oslo, 1946).

Associates: Joyce Bracewell, M.S.W. (Florida State, 1964); Linda J. Brannon, M.S. (Pennsylvania, 1971); Harold R. Gollberg, M.D. (Texas, 1966); Richard Selman, M.D. (Emory, 1972); Thomas A. Smith, M.D. (Tennessee, 1955); William A. Touchstone, M.A. (Iowa, 1974).

Clinical Associates: George W. Doss, M.D. (Texas, 1953); E. Bruce Elliston, M.D. (Loma Linde, 1972); Eric W. Peterson, M.D. (Duke, 1971); William J. Shamblin, M.D. (Med. Coll. of Alabama, 1971).

Instructors: Terrold W. Fox, M.S.W. (Florida State, 1965); Joan S. Grimes, M.S.W. (North Carolina at Chapel Hill, 1970); Shirley C. Singleton, M.S.W. (Michigan, 1958); Olin D. Wilson, M.S.W. (Florida State, 1968).

Clinical Instructors: Cecil T. Durham, M.D. (South Carolina, 1966); John W. Ledbetter, M.D. (Bowman Gray, 1953); Martin Mitchell, M.A. (North Carolina at Chapel Hill, 1972).

Clinical Instructor of Psychiatric Nursing: Cheryl Lynn Gillespie, M.S. (East Carolina, 1975).

## DIVISION OF INPATIENT SERVICES

Professor: Frederick R. Hine, M.D. (Yale, 1949), *Head of Division*.

Professor: John M. Rhoads, M.D. (Temple, 1943).

Associate Professor: George A. Silver, M.D. (Duke, 1938).

Assistant Professors: Allen Dyer, M.D. (Duke, 1972); Elliott B. Hammett, M.D. (Duke, 1966); Z. Daniel Pauk, M.D. (Iowa, 1956); Joseph Strayhorn, M.D. (Northwestern, 1974); Erwin Thompson, M.D. (Vanderbilt, 1972).

Assistant Clinical Professors: Christine Machemer, M.D. (Univ. of Bonn, Germany, 1959); Ingrid Pisetsky, M.D. (Albert Einstein, 1971); Cynia B. Shimm, M.D. (Yale, 1950); William Taylor, M.D. (Med. Coll. of Virginia, 1959).

Associate in Psychiatric Recreation Therapy: Barbara A. Yoder, M.S. (Florida, 1970).

Clinical Associates: Robert D. Miller, Ph.D., M.D. (Duke, 1973); Ernest Raba, M.D. (Texas, 1972).

Clinical Associate Psychiatric Nursing: Patricia Webster, M.S.N. (North Carolina at Chapel Hill, 1976).

## Geropsychiatry

J. P. Gibbons Professor: Ewald W. Busse, M.D. (Washington Univ., 1942), *Associate Provost and Dean, Medical and Allied Health Education*.

Professors: Daniel T. Gianturco, M.D. (Buffalo, 1960); Adriaan Verwoerd, M.D. (Med. School of Amsterdam, 1952); Hsio-shan Wang, M.D. (National Taiwan Univ., 1953).

Associate Professor: Alan D. Whanger, M.D. (Duke, 1956).

Associate Medical Research Professor: Dietolf Ramm, Ph.D. (Duke, 1969).

## DIVISION OF MEDICAL PSYCHOLOGY

Associate Professor: Robert J. Thompson, Ph.D. (North Dakota, 1971), *Head of Division*.

Professors: Irving A. Alexander, Ph.D. (Princeton, 1949); Robert C. Carson, Ph.D. (Northwestern, 1957); Edward Clifford, Ph.D. (Minnesota, 1954); Herbert F. Crovitz, Ph.D. (Duke, 1960); Martin Lakin, Ph.D. (Chicago, 1955).



Associate Professors: Patrick A. Boudewyns, Ph.D. (Wisconsin, 1968); Elaine K. Crovitz, Ph.D. (Duke, 1964); M. Marlyne Kilbey, Ph.D. (Houston, 1969); Patrick Logue, Ph.D. (North Dakota, 1965); Gail R. Marsh, Ph.D. (Iowa, 1968); Susan Schiffman, Ph.D. (Duke, 1970); W. Derek Shows, Ph.D. (Duke, 1967); Richard Surwit, Ph.D. (McGill, 1972).

Associate Clinical Professor: Larry Squire, Ph.D. (Massachusetts Inst. of Tech., 1968).

Assistant Professors: Hugh V. Angle, Ph.D. (Texas Christian, 1969); Paula A. DeRemer, Ph.D. (Purdue, 1978); Robert Hock, Ph.D. (Miami, 1976); Mary M. Huse, Ph.D. (Duke, 1959); Albert D. Loro, Jr., Ph.D. (Washington Univ., 1976); Robert D. Nebes, Ph.D. (California Inst. of Tech., 1971); Carole S. Orleans, Ph.D. (Maryland, 1977); Robert H. Shipley, Ph.D. (Iowa, 1972); Ilene Siegler, Ph.D. (Duke, 1974); Russell F. Tomlinson, Ph.D. (Florida, 1957); Linda C. Wyrick, Ph.D. (Arizona, 1971).

Assistant Clinical Professor: Richard A. Lucas, Ph.D. (North Carolina at Chapel Hill, 1972).

Assistant Medical Research Professors: Ralph Cooper, Ph.D. (Rutgers, 1973); Pamela Trent, Ph.D. (Northwestern, 1975).

Associates: David R. Anderson, Ph.D. (North Dakota, 1975); John Curry, Ph.D. (Catholic Univ., 1972).

Clinical Associates: James E. Byassee, Ph.D. (Louisville, 1975); William Fuchs, Ph.D. (Kentucky, 1978); Charles D. Gasswint, Ph.D. (Oklahoma, 1968); Yonkel Goldstein, Ph.D. (Michigan, 1976); Belinda Novick, Ph.D. (Michigan, 1977); Joseph E. Talley, Ph.D. (Virginia, 1977).

Clinical Instructor: Joseph W. Kertesz, M.A. (Michigan, 1973).

Lecturers: Bernard B. Harris, Ph.D. (Wisconsin, 1955); Theodore Seitz, Ph.D. (California at Berkeley, 1958).

## DIVISION OF OUTPATIENT SERVICES

Associate Professor: Jesse O. Cavenar, M.D. (Arkansas, 1963), *Head of Division*.

Professor: David S. Werman, M.D. (Lausanne, Switzerland, 1952).

Associate Professors: David M. Hawkins, M.D. (Duke, 1966); James L. Nash, M.D. (Duke, 1966).

Assistant Professor: William N. Grosch, M.D. (Albany Med. Coll., 1964).

Assistant Professor of Psychiatric Nursing: Eleanor M. White, M.S. (Oregon, 1963).

Assistant Clinical Professors: Priscilla Boekelheide, M.D. (Minnesota, 1949); Martin G. Groder, M.D. (Columbia, 1964); Leroy B. Lamm, M.D. (Bowman Gray, 1946); Malcolm N. McLeod, M.D. (North Carolina at Chapel Hill, 1965); Robert D. Phillips, M.D. (Pennsylvania, 1952); Karl W. Stevenson, M.D. (Bowman Gray, 1966).

Associate: John I. Walker, M.D. (Texas at Galveston, 1979).

Clinical Associates: Ernest R. Braasch, M.D. (State Univ. of New York, 1970); Frank B. Miller, M.D. (Michigan, 1974); Kinsley Weatherly, M.D. (Emory, 1959).

Clinical Instructors: Lesley Braasch, M.D. (State Univ. of New York, 1970); Thomas Stephenson, M.D. (Michigan, 1972).

## DIVISION OF PSYCHOSOMATIC MEDICINE

Associate Professor: Jeffrey L. Houpt, M.D. (Baylor, 1967), *Head of Division*.

Professors: Bernard Bressler, M.D. (Washington Univ., 1942); Joseph B. Parker, Jr., M.D. (Tennessee, 1941); Redford B. Williams, Jr., M.D. (Yale, 1967).

Clinical Professor: David Hamburg, M.D. (Indiana, 1947).

Associate Professor: Marianne S. Breslin, M.D. (Medical Academy, Duesseldorf, Germany, 1946).

Assistant Professors: Daniel G. Blazer, M.D. (Vanderbilt, 1969); Allan A. Maltbie, M.D. (Emory, 1969); James T. Moore, M.D. (Missouri, 1971).

Assistant Clinical Professor: James Buckingham, M.D. (Baylor, 1975).

Associates: Randal France, M.D. (Texas at Galveston, 1973); James Weiss, M.D. (Louisiana, 1973); Michael Volow, M.D. (Seton Hall, 1964).

## DIVISION OF PSYCHIATRIC SOCIAL WORK

Assistant Professor: Martha L. Wertz, M.S.W. (Tulane, 1952), *Head of Division*.

Associates: Mary A. Black, M.S.W. (North Carolina at Chapel Hill, 1970); Katherine Buckner, M.S.W. (North Carolina at Chapel Hill, 1964); Hallie M. Coppedge, M.S.W. (North Carolina at Chapel Hill, 1948); Maxine R. Flowers, M.S.W. (Columbia, 1964); Glynn H. Fox, M.S.W. (Louisiana, 1966); Alice Myers, M.S.W. (North Carolina at Chapel Hill, 1966); Lily P. Wang, M.S.W. (North Carolina at Chapel Hill, 1959).

Clinical Associates: Constance B. Margolin, M.S.W. (Simmons, 1970); Gail McLeod, M.S.W. (North Carolina at Chapel Hill, 1971); Mary E. Moore, M.S.W. (North Carolina at Chapel Hill, 1972); Betty B. Parham, M.S.W. (Smith, 1971); Carolyn Thornton, M.S.W. (North Carolina at Chapel Hill, 1968).

Instructors: Bess Autry, M.S.W. (North Carolina at Chapel Hill, 1976); Stephen Hawthorne, M.S.W. (California, 1974).

Clinical Instructors: Christine Bell, M.S.W. (North Carolina at Chapel Hill, 1977); Carol Cohen, M.S.W. (Wisconsin, 1975); Elinor T. Roy, M.S.W. (North Carolina at Chapel Hill, 1977); Peggy Woodhall, M.S.W. (Florida, 1976).

## Required Courses

PSC-200—consists of sixty hours devoted to human behavior. A lecture series which introduces the student to the behavioral sciences most relevant to medicine. Lecturers from the fields of behavioral neurobiology, psychology, psychiatry, and sociology discuss various areas of behavior function from the points of view of the several scientific disciplines. Areas selected for discussion are those corresponding most closely to areas of disordered function: consciousness, sensorium, memory, and intellectual functions (corresponding to organic brain disease and mental retardation); ego integration (schizophrenia); mood and affect (mood disorders); personality and interpersonal functions (neurosis and personality disorders); psychophysiological functions (psychosomatic disorders); social integration (sociopathic disorders). Functional and developmental points of view are presented and stages in the development of the individual personality are traced. Concurrently, a series of small group meetings provide opportunities for additional assimilation of lecture material and its application with specific examples of behavior through interviews of patients and group discussion. The small groups also provide opportunities to introduce effective techniques of human interviewing and interaction together with observation of the primary data of human behavior. Both didactic and small group portions of the course stress relevance of human behavior to the biological and psychological aspects of medicine.

PSC-201—required during the second year—is an eight-week clerkship in clinical psychiatry. The student assumes limited responsibility, under supervision, for diagnosis and treatment of patients on the psychiatric wards, psychiatric outpatient clinic, and psychosomatic consultation services on nonpsychiatric wards of the hospital. Supervision is directed toward the application of concepts of diagnosis, psychopathological formulation, and therapy. These concepts are taken from descriptive, biological, psychoanalytic, and psychosocial contributions to current psychiatric thought. Supervision is also provided to develop interpersonal techniques of sensitive observation and therapeutic use of self. Emphasis is placed upon concepts and techniques applicable to all patients as well as psychiatric patients. To this end student interviews with patients on the nonpsychiatric services are reviewed with a psychiatric supervisor. Didactic instruction includes seminars on symptomatic, characterological, and psychophysiological neurotic conditions; the major psychoses; psychiatric problems of childhood; adolescence and late life; drug and somatic therapies; the psychotherapies; and introductory electroencephalography. In addition to rounds and case conferences, students are encouraged to observe psychotherapy and to participate in supervised psychological treatment whenever appropriate situations can be provided.

## Electives

PSC-202(B).† **Philosophy of Science and Behavioral Sciences.** Survey of current theories of knowledge, particularly as they relate to the special complex problems of empirical meaning, objectivity, measurement, and verification in studies of human behavior. Consideration is also given to the mind-body problem. Term: 2. Weight: 1. *Hine*

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†For further information, contact the Associate Dean for Graduate Medical Education.

**PSC-213(B).† Human Development I: Birth to Adolescence.** This course is a survey of the psychological development of the child from birth through adolescence. The first segment of the course is designed to provide the student with an awareness of some of the major theoretical orientations to child development including the psychoanalytic, Piagetian, and social learning positions. This is followed by a systematic study of the normal sequences of child development, focusing in particular on some of the major events in the cognitive, social, and emotional life of the child. The course is run in seminar fashion utilizing numerous theoretical and research papers as well as observation of children in naturalistic settings to facilitate class discussion. Students will also be asked to familiarize themselves with some of the research in child development by doing an indepth review of the literature in a defined area. A primary objective of the course is to provide the student with an understanding of normal child development in order to work more effectively with children and parents. Terms: 1 or 3. Weight: 2. *Anderson*

**PSC-214(B).† Human Development II: The Later Years of Life.** This course will cover the basic research material in the psychology of adult development and aging with an emphasis on such topics as personality development, intellectual development, learning and memory, health and behavior, and research methods. Additionally, guest lecturers will talk on the role of basic research in biochemistry and physiology of aging (Dr. Sylvia); the use of research knowledge base in geriatric medicine (Dr. Nowlin); and in geriatric psychiatry (Dr. Blazer). The course will be taught as a seminar. There will be assigned readings on reserve at the library, but no text for the course. Students will be required to review the literature in an area of their choice, prepare an annotated bibliography, and have an oral examination on the topic. Term: 2. Weight: 2. *Siegler*

**PSC-215(B).† Comparative Personality Theory.** An examination of models of human functioning; topics will include examples from psychoanalytic, interpersonal, humanistic, behavioristic, and existential approaches with the goal of recognizing personality issues that may arise within the framework of the doctor-patient relationship. A paper covering empirical approaches is required. Term: 3. Weight: 1. *Crovitz*

**PSC-223(B).† Neurobiological Basis of Behavior.** The course surveys neuroanatomical, neurophysiological, neurochemical, and neuropharmacological evidence of central nervous system function as it relates to normal and abnormal behavior. Clinical description, measurement of function, as well as the biological substrates of affective disorders and psychoses, will be emphasized. Scientific bases of current therapeutic procedures, especially psychopharmacological, will be examined. Course format consists of assigned readings, study questions, lectures by faculty, and other active researchers. Mid-term and final examinations are given. Additionally, students will have an opportunity to become acquainted with and to participate in ongoing research if desired. Terms: 1-2. Weight: 4. *Ellinwood, Kilbey, Erwin, Linnolia, Logue, Marsh, Nebes, Sullivan, and Wilson*

**PSC-238(B).\*† The Electroencephalogram and Psychological Function.** A survey of the literature on brain wave correlates of intelligence, personality, behavior disorders, sleep, sensory stimulation, conditioning, and learning. Lectures and laboratory demonstrations are included. Also listed as Psychology 238 in the *Graduate School Bulletin*. Terms: 3 and 4. Weight: 3. *Marsh*

**PSC-293(B).† Theory of Treatment Approaches of Behavioral Psychology.** This course will cover learning theory behind the behavioral management of maladaptive behaviors, as well as those behaviors associated with chronic medical problems. Obesity, as an example of a chronic medical care problem, will be used



as a model for elaboration of theory. The course is intended for those interested in psychiatry and/or chronic disease as seen in family practice. The relevance of this theory to the patient-doctor relationship will be indicated. Term: 3. Weight: 2. *Surwit and Keese*

**PSC-297(B).†Contemporary Black American Health Patterns.** Subcultural awareness increase through descriptive analytical survey of black health patterns, related literature, and evaluation of relevant federal programs with emphasis upon political, racial, and socioeconomic problems (2 units) and optional student sociocultural research preceptorship or relevant problems (2-6 units). Summer Term II. Weight: 2-8. *Jackson*

**PSC-299(B).† Preceptorship in Neurobiology and Behavioral Science.** Opportunity for the student to work closely with a member of the faculty in an area of mutual interest, with emphasis upon research. (See biobehavioral study program for partial list of interest areas; more complete descriptions available.) Every term. Weight: 1-8. *Ellinwood*

**PSC-303(B).† Developmental Disabilities.** The course will focus on several disorders illustrative of the field, such as retardation, autism and learning disabilities as well as broader issues relating to evolving approaches at diagnosis, remediation, and prevention. The objectives are to present what is known about the etiology and course of developmental disabilities as well as an appreciation of management issues. Terms: 1, 2. Weight: 2. *Thompson*

**PSC-305(B).† Social and Cultural Aspects of Illness.** Seminar on medical-social roles in community and hospital. Topics include physician-patient relationship; epidemiology of illness and health services in terms of ecology, social stratification, race, deviance, and life cycle. Students prepare and present to the seminar a term paper on a topic of their choice. Students wishing further work in one particular topic such as Negro sub-culture or gerontology, should take PSC-299(B) specifying particular interest. May be taken in conjunction with PSC-230(C) and PSC-251(C). Term: 3. Weight: 3. *Palmore and Maddox*

**PSC-227(C). Behavioral Aspects of Pediatrics.** The purpose of this course is to provide training and experience in recognizing and managing the emotional reactions of children to medical illness. An integral aspect of this course will be clinical interviews with selected family members to determine the impact of serious pediatric illness on the emotional health and well being of family members. (See also PED-227(C).) Terms: Terms 1, 2, 3, or 4; Summer Term I. Weight: 2-6. *Jones, Yancy, and Burns*

**PSC-234(C). Clinical and Experimental Psychopharmacology.** Experience in one or more areas of psychopharmacology including clinical use of drugs, human experimental psychopharmacology and animal neuropharmacology. Lectures covering drug metabolism; mechanisms of action; drug-to-drug interaction; use of animal models for screening psychotropic compounds; animal models of psychosis; neurochemical, behavioral, and electrophysiological effects of drugs during acute and chronic administration; FDA guidelines for conduction of clinical drug trials; biometric approach to ratings of psychopathology; statistical models and computer analysis techniques. Term: 2. Weight: 4. *Zung, Ellinwood, Linnoila, and Sullivan*

**PSC-240(C). Inpatient Psychiatry.** This course is an intensive clinical experience in the diagnosis and treatment of severe and incapacitating psychiatric disorders. The student will be given more clinical responsibility than the comparable second year inpatient rotation. Patient care responsibilities will include management of ward milieu. Treatment approaches emphasizing psychotherapeu-



tic medication, individual and group psychotherapy will be part of the clinical experience. Participation at selected patient care conferences and didactic lectures is expected. The rotation is available at Duke and the V.A. The rotation at the V.A. will include admission decision-making. This experience can be structured to include a survey of the variety of residential treatment available in this area. If desired a student may arrange for a special reading tutorial in related topics (e.g. schizophrenia). Every term. Weight: 8-6-3. *Cavenar, Thompson, and Hine*

**PSC-243(C). Principles and Practice of Outpatient Psychiatry.** Training and experience in recognizing and treating emotional disorders in outpatients. Supervised experience with patients having emotional problems commonly seen in medical practice. Training to include theory and techniques of brief psychotherapy, crisis intervention, supportive psychotherapy, and utilization of community resources, both at Duke Hospital and neighboring agencies. Every term. Weight: 3-8. *Hawkins and Weiss*

**PSC-245(C). Psychosomatic Medicine.** The consultation-liaison services at the Duke Medical Center and the V.A. Hospital offer clinical clerkships in the psychological management of medical patients. At Duke Hospital, the student does consultations to the various medical and surgical services under the supervision of residents and staff. Emphasis is placed on training the student in interviewing, assessing, and intervening with patients who are depressed, hypochondriacal, responding emotionally to illness, or have conversion symptoms. At the V.A. Hospital opportunities are available to work with selected staff people on the emotional aspects of the disease process through surgical and medical liaison consultations. Students can select specific areas of interest which include emotional aspects of cardiac disease, intensive care, death and dying, orthopaedics, and pain. Terms: 1, 2, 3, or 4. Weight: 8. *Blazer, Breslin, Bressler, Houpt, Maltbie, Grosch, Parker, Sullivan, and Williams*

**PSC-251(C). Community Psychiatry and Mental Health.** The student will be assigned to a faculty member active in community mental health consistent with the student's special interests, such as agency consultation, sociological studies, community health center operations, student mental health, suicide and crisis intervention, etc. The faculty instructor will work out a laboratory project and special areas of study. Terms: 1, 2, 3, or 4. Weight: 4-8. *Llewellyn, Maddox, Rockwell, Carter, Anderson, Harris, and Keith*

**PSC-252(C). Christianity, Medicine, and Psychiatry.** A clinical training program in which the relationships of Christian insights to the practice of medicine and especially psychological medicine are presented. The course includes attendance at regularly scheduled seminars; individual supervision in the diagnosis, management, and therapy of patients; supervised reading; and a special seminar related to religious psychopathology, as well as the mental health benefits of Christian beliefs. Terms: 1, 2, 3 or 4. Weight: 4 or 8. *Wilson*

**PSC-253(C). Group Psychotherapy.** Observation of an on-going outpatient group psychotherapy program. Every term. Weight: 1. *Hawkins and staff*

**PSC-255(C). Marriage Counseling in Medical Practice.** Basic concepts of the marital relationship and the fundamentals of recognizing, evaluating, and counseling patients with marital problems will be taught. The orientation will be for the physician delivering primary care. References to the literature will be discussed, and a bibliography will be supplied; community resources for marriage counseling will be described; a field trip to a marriage counseling agency will be made; and students will be expected to present case material for discussion during class sessions. Term: 2. Weight: 1. *Llewellyn, Buckner, and Breslin*

**PSC-259(C). Clinical Electroencephalography.** The purpose of this course is to acquaint the student with the clinical utility of the electroencephalogram in medical diagnosis. Supervised electroencephalographic interpretation sessions meet daily. Formal didactic instruction will also be provided. Every term. Weight: 2. *Wilson, Erwin, and Volow*

**PSC-261(C). Clinical Psychology.** The goal of this course is to help the student determine the relevance of psychological factors in the etiology and management of common medical problems. The course will introduce the student to psychological assessment techniques. Students will gain familiarity with the potential utility of these tests in medical practice by both observation and practice in their administration and interpretation. Students who are interested in medical problems such as cognitive impairment, low back pain, headache, or cardiac disease may elect to concentrate their efforts in a specific area. Terms: 1, 2, 3, or 4. Weight: 1. *Huse and staff*

**PSC-265(C). Inpatient Adolescent and Family Psychiatry.** Adolescent and family psychopathology are emphasized in the full-time clinical rotation. The experience offered is an intensive and rich one with opportunities to observe and treat patients and their families. Group and individual supervision, collaboration with milieu team members and diagnostic and treatment conferences are heavily emphasized. Every term. Weight: 8. *Miller and Guajardo*

**PSC-267(C). Clinical Child Psychiatry.** Survey of child and adolescent psychopathology, including diagnostic treatment and consultative approaches. Conferences and seminars augment closely supervised clinical experiences. Terms: 1, 2, 3, and 4. Weight: 8 or 16. *W. Anderson*

**PSC-268(C). Psychosocial Aspects of Medical Illness.** Seminars and supervised clinical experiences on the medical wards and clinics will be used to provide the student with knowledge of basic principles and practical clinical skills relevant to determining the role of psychosocial factors in the etiology and course of physical disease in man. This course must be taken in conjunction with a clinical rotation that includes ongoing responsibilities for patient care. Also listed as MED-268(C). Every term. Weight: 2. *Williams*

**PSC-327(C). Practical Clinical Psychopharmacology.** This course is designed to provide the prospective non-psychiatric physician with a practical approach to the drug management of psychiatric illnesses which are frequently encountered in a general medical or surgical setting. One of the two weekly course hours will be a clinical case presentation. The other session will be devoted to a discussion of psychotropic drug side effects and drug interactions, medical complications of psychotropic drugs, and psychiatric complications of medical drugs. Every term. Weight: 2. *Sullivan*

**PSC-333(C). Psychiatric Theory and Practice and Therapeutic Community in a Private Psychiatric Hospital.** Principles and practice of psychiatric diagnosis and treatment. Instruction and administration. Theory of and supervised experience in individual psychotherapy, group psychotherapy, occupational therapy, recreational therapy, and total management of the patient. Active involvement in therapeutic community of the hospital. Lodging for single and married students furnished. Every term. Weight: 9. *Bonner, Gillespie, Selman, and Potts*

**PSC-335(C). Research Preceptorship in Clinical Psychiatry.** This course allows the student to work on a research project in clinical psychiatry with selected members of the psychiatric staff. Terms: 1, 2, 3, or 4. Weight: 3-8. *Clinical Staff by Arrangement and Gianturco*



**PSC-337(C). Geriatric Psychiatry.** The medical and clinical aspects of geriatric psychiatry with emphasis on diagnosis and management of geriatric patients in a variety of treatment facilities. Course includes attendance at scheduled conferences and supervised review of geriatric literature. Course may be taken in conjunction with PSC-214(B). Terms: 1, 2, 3, or 4. Weight: 3-8. *Verwoerd, Whanger, Blazer, Wang, Palmore, and staff*

**PSC-339(C). Preceptorships in Clinical Psychiatry.** An advanced training program in the preceptorship style for the recognition, diagnosis, prognosis, and treatment of psychiatric disorders. Experience will be mainly with inpatients and patients seen in consultation from other services but may include outpatients as well. Terms: 1, 2, 3, or 4. Weight: 3-8. *Clinical Staff by Arrangement and Gianturco*

**PSC-343(C). Clinical Aspects of Alcohol and Drug Abuse.** The purpose of this course is to provide training and experience in recognizing and managing alcoholics and drug abusers. The student will participate in the evaluation and treatment of abusers. Students will also have the opportunity to participate in alcohol detoxification. The principles and practical management of detoxification of alcoholics will be demonstrated and discussed in depth. Personality characteristics and family interactions of abusers will be emphasized. Abuse is also a social process and the sociocultural milieu will be considered in depth. The student will also be instructed in the neuropharmacology of addicting drugs and alcohol. Students may also have the opportunity to participate in the on-going research of the Behavioral Neuropharmacology Section. Attendance at weekly neurophar-



macology seminars is encouraged. Terms: 3 or 4. Weight: 4-8. *Ellinwood, Maddox, Rockwell, Angle, Kilbey, and Miller*

**PSC-353(C). Prison Psychiatry—Adult and Adolescent.** Part-time or full-time experience in a prison setting is offered. Diagnosis and treatment of adult and adolescent offenders with a variety of medical illnesses and behavioral disturbances are recognized. Elements of forensic psychiatry are stressed where appropriate. Supervision is provided by Duke and University of North Carolina consultants and the Central Prison Hospital and mental health staff. Opportunities for participation in a wide range of original and continuing research are available. Every term. Weight: 2-9. *Carter, Smith, Kaye, and Felix*

**PSC-355(C). Clinical Experience in Psychotherapy.** This course provides supervised instruction in the long-term care of patients with emotional illness. The student will undertake the psychotherapy of a patient under the direction of a member of the psychiatric faculty. The arrangement with the psychiatric supervisor should be discussed and confirmed with the fourth year clinical departmental professional adviser in psychiatry. Every term. Weight: 1-3. *Gianturco and staff*

**PSC-357(C). Clinical Applications of Biofeedback and Behavior Therapies.** This course is designed to acquaint the student with behavioral treatment approaches which have proved useful in management of many medical problems. Students will be involved in evaluation and treatment of patients with somatic and psychiatric disorders. Treatment will consist of behavioral modification approaches with particular emphasis on biofeedback. Every term. Weight: 1. *Williams*

**PSC-365(C). Individual Psychotherapy Based on Psychoanalytic Theory.** Seminar concerning the theory and practice of individual psychotherapy involving reading, lecture, and discussion. If possible, on-going discussion of student's cases will be utilized. Students will be encouraged to become involved in therapeutic work with an individual case. Term: 1. Weight: 1, 2, 3. *Pauk*

## Radiology

Professor: Charles E. Putman, M.D. (Texas, 1967), *Chairman*.

### DIVISION OF IMAGING

Associate Professor: Carl E. Ravin, M.D. (New York, 1968), *Director*.

Professors: William F. Barry, Jr., M.D. (Pennsylvania, 1948); George Baylin, M.D. (Duke, 1937); James T.T. Chen, M.D. (Natl. Defense Med. Ctr., 1950); Jack K. Goodrich, M.D. (Tennessee, 1953); Herman Grossman, M.D. (Columbia, 1953); E. Ralph Heinz, M.D. (Pennsylvania, 1955); Melvyn Korobkin, M.D. (Connecticut, 1967); Reed P. Rice, M.D. (Indiana, 1955).

Associate Professors: Richard H. Daffner, M.D. (Buffalo, 1969); Eric L. Effmann, M.D. (Indiana, 1967); John A. Gehweiler, M.D. (Duke, 1956); C. Craig Harris, M.S. (Tennessee, 1951); Donald C. Jackson, M.D. (Sheffield, 1954); John P. Jimenez, M.D. (Med. Coll. of Virginia, 1955); Donald R. Kirks, M.D. (Missouri, 1968); David F. Merten, M.D. (Cincinnati, 1948); Robert McLelland, M.D. (Cincinnati, 1948); Robert A. Older, M.D. (Duke, 1968); James C. Reed, M.D. (Miami, 1968); Thomas T. Thompson, M.D. (Med. Coll. of Virginia, 1964); William M. Thompson, M.D. (Pennsylvania, 1969); Robert H. Wilkinson, Jr., M.D. (Washington Univ. 1958); Joseph P. Workman, M.D. (Maryland, 1946).

Assistant Professors: Collins Baber, M.D. (Duke, 1973); William H. Briner, B.S. (Temple, 1954); Frederick P. Bruno, M.S. (Florida, 1965); Oliver P. Charlton, M.D. (Witwatersrand, South Africa, 1954); Philip J. Dubois, M.D. (Australia, 1969); William Foster, Jr., M.D. (Duke, 1973); Michael D. Halber, M.D. (Colorado, 1971); Frederick M. Kelvin, M.D. (Univ. of London, 1966); Stephen H. Ladwig, M.D. (Illinois, 1972); Linda Magness, M.D. (Kentucky, 1974); Salutario Martinez, M.D. (Havana Univ., 1961); Steven R. Mills, M.D. (North Carolina at Chapel Hill, 1972); Michael McCrory, M.D. (Tufts, 1973); Carlisle L. Morgan, M.D. (Miami, 1972); Josephine Newell, M.D. (Maryland, 1949); Terrence A. Oddson, M.D. (Texas Southwestern, 1969); Dennis R. S. Osborne, M.D. (London, 1967); Daniel C. Sullivan, M.D. (Vermont, 1970); William S. Trought, M.D. (Tufts, 1968).



Associate: Elizabeth Blackburn, R.T., M.Ed. (Madison, 1954).

Research Associates: W. Milton Bates; Lawrence W. Hedlund, Ph.D. (Pennsylvania, 1968).

## DIVISION OF RADIATION BIOLOGY

Professor: Aaron P. Sanders, Ph.D. (North Carolina at Chapel Hill, 1964), *Director*.

Associate Professor: William D. Currie, Ph.D. (North Carolina at Chapel Hill, 1964).

Assistant Professor: Raymond U, Ph.D. (Kyoto, Japan, 1970).

Associate: Randy L. Jirtle, Ph.D. (Wisconsin, 1975).

## DIVISION OF RADIATION PHYSICS

Professor: Fearghus O'Foghludha, Ph.D. (Natl. Univ. of Ireland, 1961), *Director*.

Associate Professor: Farideh Bagne, Ph.D. (Pennsylvania, 1970).

Assistant Professors: G. Allan Johnson, Ph.D. (Duke, 1974); Alice McCrea, M.S. (Chicago, 1956).

Research Associate: James W. Blackburn.

## DIVISION OF RADIATION THERAPY

Assistant Professor: K. T. Noell, M.D. (Rochester, 1967), *Acting Director*.

Associate Professors: Kent T. Woodward, M.D. (Med. Coll. of South Carolina, 1947), Ph.D. (Rochester, 1966); Boyd T. Worde, M.D. (Tennessee, 1947).

Assistant Professor: Robert I. Fishburn, M.D. (California, 1970).

## Required Course

**RAD-200**—the basic course in radiology for all medical students is combined with physical diagnosis and laboratory diagnosis into IND-200. The course is a concentrated lecture series with correlating demonstration laboratories designed to provide a broad introductory exposure to the entire field of diagnostic radiology.

## Electives

**RAD-205(B). Introduction to Radiological Sciences.** Basic principles underlying radiography, contrast materials, ultrasound, nuclear medicine, and computerized tomography will be presented. A thorough review of radiographic anatomy will precede an organ-system approach to radiologic-pathologic correlation. Lectures will be supplemented with demonstrations and laboratory work. Term: 3. Weight: 3. *Effmann, Thompson, and Putman*

**RAD-221(B). General Physics of Radiology.** Basic physics underlying radiation diagnosis and therapy, emphasizing production and measurement of ionizing radiation and radiation interactions in tissue; physical rationale of radiation methods in clinical practice; survey of recent developments in radiological equipment; radiation hazards. Terms: 2 and 3. Weight: 2. *O'Foghludha*

**RAD-223(B). Radioisotope Methods and Techniques in Biomedical Research.** Introduction to principles and practices in biomedical research applications of radioactive materials: fundamentals of radioactivity, nuclear instrumentation, counting methodology, statistics of counting, liquid scintillation counting, external standard ratio, sample preparation. This course will be helpful for those seeking state or federal licenses for biomedical research uses of radioactive materials. Terms: 3. Weight: 2. *Sanders, O'Foghludha, McCrea, Currie, and Knight*

**RAD-227(B). General Radiobiology.** Basic fundamentals essential to an understanding of biological effects of ionizing radiation. Major sections include radiation physics, radiation dosimetry, target theory, and activated water theory in radiation damage, oxygen effect, radiobiochemistry, subcellular effects, tissue radiosensitivity, general radiation syndrome. Term: 3. Weight: 2. *Sanders, Currie, and Jirtle*

**RAD-250(B). Tutorial in Radiology.** An individually arranged experience in which the student identifies with and participates in an established research program of a faculty member. Program should be arranged with DPA and proposed faculty member well in advance of starting date. Every term. Weight: 1-8. *Effmann, Thompson, and Putman*

**RAD-207(C). Pediatric Radiology.** A specialized program of instruction and participation in the wide variety of radiographic examinations in the pediatric age group. Special correlation of these examinations to the problems of specific diagnosis and patient care will be made. Students are to meet with Dr. Grossman prior to registering for this course. Every term. Weight: 4-8. *Grossman and staff*

**RAD-209(C). Clerkship in Neuroradiology.** A specialized program of detailed instruction in neuroradiology. The program includes participation in the performance and interpretation of a variety of examinations including cerebral angiography, pneumoencephalography, computerized axial tomography, myelography, cisternography, and others. Students are to meet with Dr. Neinz prior to registering for this course. Every term. Weight: 4. *Neinz and staff*

**RAD-215(C). Clinical Radiation Therapy.** Approximately one-quarter of new cancer patients seen at the Medical Center are treated by the Division of Therapeutic Radiology. The course provides a broad opportunity to observe and participate in the management of cancer patients before, during, and after treatment. The course is aimed particularly at students leaning toward careers in medical oncology, urology, gynecology, otolaryngology, thoracic surgery, and general surgery, as well as radiotherapy. Students are to meet with the departmental professional adviser prior to registering for any of the clinical electives in radiology. Every term. Weight: 4-8. *Miller and staff*

**RAD-229(C). Basic Radiology Clerkship.** This is designed to provide a broad exposure to varied aspects of radiology, with the emphasis on diagnostic radiology. The elective consists of: (a) an informal lecture course, (b) viewing a series of audiovisual tapes, (c) use of an extensive teaching file of radiographs, and (d) weekly rotations observing the performance and interpretation of routine and special radiographic procedures. The student is expected to spend one week on the chest rotation but additional time in chest radiology in one week blocks up to a maximum of four weeks may be arranged with Dr. Reed (maximum two students). The other rotations are entirely at the student's discretion, and may include GI, GU, skeletal, neuro, ENT, ultrasound, CT, pediatrics, and vascular radiology. Rotations to Veterans Administration Hospital radiology, nuclear medicine and radiation therapy can also be arranged. All registrants will meet with Dr. Kelvin in a week prior to starting the course to discuss their individual needs. Every term. Weight: 4-8. *Kelvin and staff*

## Surgery

James B. Duke Professor: David C. Sabiston, Jr., M.D. (Johns Hopkins, 1947), *Chairman*.

### DIVISION OF GENERAL AND THORACIC SURGERY

Professor: William W. Shingleton, M.D. (Bowman Gray, 1943), *Chief of Division of General Surgery*.

Professors: D. Bernard Amos, M.D. (Guys Hospital, London, 1963), *Experimental Surgery*; William G. Anlyan, M.D. (Yale, 1949); Dani P. Bolognesi, Ph.D. (Duke, 1964), *Experimental Surgery*; Eugene D. Day, Ph.D. (Delaware, 1952), *Experimental Surgery*; R. Scott Jones, M.D. (Texas, 1961); Norman Kirshner, Ph.D. (Pennsylvania, 1952), *Experimental Surgery*; H. Newland Oldham, Jr., M.D. (Baylor, 1961); William P. J. Peete, M.D. (Harvard, 1947); Raymond W. Postlethwait, M.D. (Duke, 1937); Will C. Sealy, M.D. (Emory, 1936); Hilliard F. Seigler, M.D. (North Carolina at Chapel Hill,

1960); Delford L. Stickel, M.D. (Duke, 1953); Samuel A. Wells, Jr., M.D. (Emory, 1961); Walter G. Wolfe, M.D. (Temple, 1963); W. Glenn Young, Jr., M.D. (Duke, 1948).

Associate Professors: Onyekwere Akwari, M.D. (Southern California, 1970); Darell D. Bigner, M.D. (Duke, 1965), Ph.D. (Duke, 1971), Experimental Surgery; Howard C. Filton, M.D. (Western Reserve, 1962); James C. A. Fuchs, M.D. (Johns Hopkins, 1964); Robert H. Jones, M.D. (Johns Hopkins, 1965); Joseph A. Moylan, Jr., M.D. (Boston, 1964); Norman F. Ross, D.D.S. (Temple, 1937), Dentistry; Wirt W. Smith, M.D. (Texas, 1951), Experimental Surgery; Andrew S. Wechsler, M.D. (State Univ. of New York, 1964).

Associate Medical Research Professor: Per-Otto F. Hagen, F.H.W.C. (Watt University, Edinburgh, Scotland, 1961), Experimental Surgery.

Associate Clinical Professors: James E. Davis, M.D. (Pennsylvania, 1943); William F. Hollister, M.D. (Duke, 1939); H. Max Schiebel, M.D. (Johns Hopkins, 1933); Stewart M. Scott, M.D. (Baylor, 1951); Gulshan K. Sethi, M.D. (All India, 1963); Timothy Takaro, M.D. (New York Univ., 1943).

Assistant Professors: Jeffrey J. Collins, Ph.D. (Harvard, 1972), Experimental Surgery; Jim L. Cox, M.D. (Tennessee, 1967); William Dilley, Ph.D. (California, 1970); John P. Grant, M.D. (Chicago, 1969); Darrow E. Hoagensen, Jr., M.D. (Columbia, 1974), Experimental Surgery; Jonathan P. Leis, Ph.D. (Cornell, 1970), Experimental Surgery; Philip D. Lumb, M.B.B.S. (London Univ. School of Med., 1974); Frances F. Ward, Ph.D. (Brown, 1965), Experimental Surgery.

Assistant Medical Research Professors: John C. Cambier, Ph.D. (Iowa, 1975); Barbara Kitchell, Ph.D. (Duke, 1974); Elmer J. Rauckman, Ph.D. (Duke, 1975).

Assistant Clinical Professors: Albert H. Bridgman, M.D. (Louisiana, 1956); Rollins S. Burhans, Jr., M.D. (Louisville, 1963); Gordon M. Carver, M.D. (Duke, 1948); John M. Cheek, Jr., M.D. (Bowman Gray, 1945); John T. Daniels, M.D. (Howard, 1964); Thomas J. Enright, M.D. (Buffalo, 1948); William B. Hall, Jr., M.D. (Med. Coll. of Virginia, 1954); Alphonse J. Langlois, Ph.D. (Duke, 1966); Walter J. Loehr, M.D. (Cornell, 1963); F. Maxton Mauney, Jr., M.D. (Duke, 1959); W. B. McCutcheon, Jr., M.D. (Virginia, 1952); Amir A. Neshat, M.D. (Isfahan University, Iran, 1960); E. Wilson Staub, M.D. (Northwestern, 1957); Douglas H. Stone, M.D. (Harvard, 1937); Charles D. Watts, M.D. (Howard, 1943); James S. Wilson, M.D. (Duke, 1937).

Clinical Associates: Ray A. Ashcraft, B.S. (North Texas State, 1958), D.D.S. (Baylor, 1963), Dentistry; Thomas A. Ferretti, D.D.S. (North Carolina at Chapel Hill, 1976); Robert N. Hunter, D.D.S. (North Carolina at Chapel Hill, 1977), Dentistry; Theron C. Johnson, D.D.S. (Kansas, 1960), Dentistry.

Research Associates: Gudrun Huper, M.A. (Stuttgart, Germany); Thomas J. Matthews, Ph.D. (Missouri, 1971); Ronald C. Montelaro, Ph.D. (Wisconsin, 1975); Anthony V. Seaber; Gary M. Stuhlmiller, Ph.D. (Duke, 1976); Karin S. Thiel, Ph.D. (Duke, 1977).

## DIVISION OF NEUROSURGERY

Professor: Robert H. Wilkins, M.D. (Pittsburgh, 1959), *Chief*.

James B. Duke Professor: Guy L. Odom, M.D. (Tulane, 1933).

Professor: Blaine S. Nashold, M.D. (Louisville, 1949).

Associate Professor: Wesley A. Cook, Jr., M.D. (Oregon, 1963).

Assistant Professors: Edward Granz, M.D. (Chicago, 1967); W. Jerry Oakes, M.D. (Duke, 1972); Bruno J. Urban, M.D. (Germany, 1960).

Assistant Clinical Professors: Walter S. Lockhart, M.D. (Bowman Gray, 1944); Robert E. Price, Jr., M.D. (North Carolina at Chapel Hill, 1964).

Associate: Richard S. Kramer, M.D. (Duke, 1962).

Research Associate: Vincent A. Varitek, Ph.D. (Duke, 1977).

Associate: Richard S. Kramer, M.D. (Duke, 1962).

## DIVISION OF ORAL SURGERY

Professor: Nicholas G. Georgiade, D.D.S., M.D. (Duke, 1949), *Chief*.

Assistant Professor: John C. Angelillo, D.D.S., M.D. (Duke, 1970).

## DIVISION OF ORTHOPAEDIC SURGERY

Professor: J. Leonard Goldner, M.D. (Nebraska, 1943), *Chief*.

Professors: Frank H. Bassett III, M.D. (Louisville, 1957); Frank W. Clippinger, M.D. (Washington, 1952); Donald E. McCollum, M.D. (Bowman Gray, 1953); James R. Urbaniak, M.D. (Duke, 1962).

Associate Professor: William D. Gentry, Ph.D. (Florida, 1969).

Associate Clinical Professors: Everett I. Bugg, Jr., M.D. (Johns Hopkins, 1937); Ralph W. Coonrad, M.D. (Duke, 1947); John Glasson, M.D. (Cornell, 1943); Frank H. Stelling III, M.D. (Georgia, 1938).

Assistant Professors: Donald S. Bright, M.D. (Maryland, 1967); John M. Harrelson, M.D. (Duke, 1964); John D. Lucey, M.D. (Hahnemann, 1970); Robert J. Ruderman, M.D. (Rochester, 1968).

Assistant Clinical Professors: J. Lawrence Frank, M.D. (Duke, 1965); J. George Jonas, M.D. (Zurich, 1954); Stephen N. Lang, M.D. (Illinois, 1965); C. Robert Lincoln, M.D. (Med. Coll. of Virginia, 1960); Angus M. McBryde, Jr., M.D. (Duke, 1963); Robert E. Musgrave, M.D. (Tennessee, 1946); William S. Ogden, M.D. (Med. Coll. of Georgia, 1965); Eugene L. Zorn, M.D. (New York Med. Coll., 1941).

Associate: Harold A. Ziebat, Jr., Ph.D. (Arizona, 1976).

Clinical Associates: Delos W. Boyer, M.D. (George Washington, 1950); Albert T. Jennette, M.D. (North Carolina at Chapel Hill, 1959); Glendall L. King, M.D. (Washington, 1955), Ph.D. (Illinois, 1949); Leslie C. Meyer, M.D. (Nebraska, 1943); George R. Miller, M.D. (Rochester, 1944); Ronald A. Pruitt, M.D. (Med. Coll. of Virginia, 1959).

Clinical Instructor: William J. Callison, M.D.

## DIVISION OF OTOLARYNGOLOGY

Professor: William R. Hudson, M.D. (Bowman Gray, 1951), *Chief*.

Professor: George Baylin, M.D. (Duke, 1937).

Associate Professors: T. Boyce Cole, M.D. (North Carolina at Chapel Hill, 1962); Joseph C. Farmer, Jr., M.D. (Duke, 1962); Patrick D. Kenan, M.D. (Duke, 1959).

Associate Medical Research Professor: John H. Casseday, Ph.D. (Indiana, 1970).

Associate Clinical Professors: George B. Ferguson, M.D. (Jefferson Med. Coll. 1932); Carl M. Patterson, M.D. (Maryland, 1944).

Assistant Professor: Seth H. Lowell, M.D. (Duke, 1973).

Assistant Medical Research Professor: Peter G. Kaufman, Ph.D. (Chicago, 1971).

Assistant Clinical Professors: Carter S. Bagley, M.D. (Virginia, 1959); James W. Brown, Jr., M.D. (Duke, 1941); Charles E. Clark III, M.D. (Michigan, 1968); William B. Costenbader III, M.D. (Virginia, 1964); Seth G. Hobart, Jr., M.D. (Virginia, 1950); Lynn A. Hughes, M.D. (Oklahoma, 1968); James B. Powell II, M.D. (Alabama, 1965).

Clinical Associates: Edward V. Hudson, M.D. (Bowman Gray, 1962); William B. Inabnet, M.D. (Louisiana, 1958); Thaddeus H. Pope, Jr., M.D. (North Carolina at Chapel Hill, 1957).

## DIVISION OF PLASTIC AND MAXILLOFACIAL SURGERY

Professor: Nicholas G. Georgiade, D.D.S., M.D. (Duke, 1949), *Chief*.

Professors: Edward Clifford, Ph.D. (Minnesota, 1954); Kenneth L. Pickrell, M.D. (Johns Hopkins, 1935); Galen W. Quinn, D.D.S. (Creighton, 1952), Orthodontics.

Associate Professor: Donald Serafin, M.D. (Duke, 1964).

Assistant Professors: John C. Angelillo, D.D.S., M.D. (Duke, 1970); Ronald Riefkohl, M.D. (Tulane, 1972); J. Connell Shearin, Jr., M.D. (Pennsylvania, 1968).

Assistant Clinical Professors: Kenneth R. Diehl, D.M.D. (Emory, 1961), Orthodontics; Verne C. Lannier, Jr., M.D. (Vanderbilt, 1966).

Research Assistant: Ruth S. Georgiade, M.A. (Duke, 1950).

## DIVISION OF UROLOGIC SURGERY

Professor: James F. Glenn, M.D. (Duke, 1953), *Chief*.

Professors: E. Everett Anderson, M.D. (Duke, 1958); John E. Dees, M.D. (Virginia, 1933); James H. Semans, M.D. (Johns Hopkins, 1936).

Associate Professors: Robert A. Bonar, Ph.D. (California at Berkeley, 1953), Biophysics; David F. Paulson, M.D. (Duke, 1964); John L. Weinerth, M.D. (Harvard, 1967).

Associate Medical Research Professor: Don D. Mickey, Ph.D. (Louisiana, 1969).

Associate Clinical Professors: John H. Grimes, M.D. (Northwestern, 1965); Jack Hughes, M.D. (Pennsylvania, 1943); Louis C. Roberts, M.D. (Duke, 1934).

Assistant Professors: Culley C. Carson III, M.D. (George Washington, 1971); Elaine K. Crovitz, Ph.D. (Duke, 1964); Ronald P. Drueger, M.D. (Duke, 1965); George S. Webster, M.B., Ch.B. (Univ. Coll. of Rhodesia, 1968).

Assistant Medical Research Professor: John W. Day, Ph.D. (Iowa, 1972).

Assistant Clinical Professors: A. James Coppridge, M.D. (Virginia, 1953); Alvin D. Couch, M.D. (South Carolina, 1948); Joyce D. Coughlin, M.D. (Buffalo, 1944); Hector H. Henry II, M.D. (Tulane, 1965); Edwin M. Tomlin, M.D. (Tennessee, 1946).

Associate: Robert W. Green, Ph.D. (Hawaii, 1969).

Clinical Associates: James A. Bergant, M.D. (Kansas, 1969); Alexander Maitland III, M.D. (Yale, 1955); George H. Mickey, Ph.D. (Texas, 1938); Randall B. Vanderbeek, M.D. (Duke, 1963).

Clinical Instructors: Oscar W. Brazil, Jr., M.D. (Louisiana, 1961); Raymond E. Joyner, M.D. (Bowman Gray, 1968).



Research Associates: Yousuf Sharief, Ph.D. (North Carolina State, 1973); Karen S. Webb, Ph.D. (North Carolina at Chapel Hill, 1973).

Clinical Research Associate: Dannie H. King, Ph.D. (North Carolina State, 1973).

## PROGRAM IN HEARING AND SPEECH DISORDERS

Professor: LuVern H. Kunze, Ph.D. (Iowa, 1962), *Director*.

Associate Professor: Bruce A. Weber, Ph.D. (Illinois, 1966).

Assistant Professors: Jennifer Horner, Ph.D. (Florida, 1977); John E. Riski, Ph.D. (Florida, 1976).

Associates: Burton B. King, M.A. (Northwestern, 1955); Robert G. Paul, Ph.D. (Oklahoma, 1969).

Instructor: Barbara G. Saunders, M.A. (Tennessee, 1974).

### Required Course

SUR-200, the required course in surgery, is given in the second year and consists of an eight week clinical clerkship. The primary goal is the presentation of those concepts and principles which characterize the discipline of surgery. The fundamental features which form the foundation of surgical practice are presented at seminars three times weekly. The subjects discussed include antisepsis, surgical bacteriology, wound healing, inflammation, fluid and electrolyte balance, shock, the metabolic response to trauma, biology of neoplastic disease, gastrointestinal physiology and its derangements, and blood coagulation, thrombosis, and embolism.

The students are divided into two groups, one at Duke and the other at the V.A. Hospital, and each works with two members of the surgical faculty. Students are assigned patients on the surgical wards for diagnosis and management, and clinical rounds are made three times weekly with the faculty. A full-time teaching resident is assigned for the course in order to provide the students with continuous and readily available instruction at all times. A one hour session is devoted daily to demonstrations by the surgical specialties including neurosurgery, orthopaedics, otolaryngology, plastic surgery, and urology. The students attend a weekly session in experimental surgery, during which each student serves in rotation as the anesthesiologist, first assistant, and operating surgeon in performance of surgical procedures on experimental animals.

### Electives

**SUR-201(C). Advanced Surgery—Emphasis Cancer.** Advanced concepts in surgery will be presented in seminars, and in ward, clinic, and operating room experiences. Fifty to 75 percent of the time will be devoted to clinical cancer and related basic topics, and the remainder to surgery generally. (Note: a seminar will be the same as in SUR-291. The student, therefore, may elect to take SUR-201 or 291 but not both. Terms: 1, 2, 3, and 4. Weight: 8. *Shingleton, Wells, Seigler, and Grant*

**SUR-202(C). Advanced Surgery—Emphasis Cardiovascular-Thoracic.** Advanced concepts in surgery will be presented in seminars and in ward, clinic, and operating room experiences. Fifty to 75 percent of the time will be devoted to cardiovascular-thoracic surgery and related basic topics, and the remainder to surgery generally. Term: 2. Weight: 8; 2 for seminars only. *Sabiston, Oldham, Sealy, Wolfe, Young, Wechsler, R. Jones, Fuchs, and Cox*

**SUR-203(C). Advanced Surgery—Emphasis Transplantation.** Advanced concepts in surgery will be presented in seminars, and in ward, clinics, and operating room experience. Fifty to 75 percent of the time will be devoted to clinical transplantation and related basic topics, and the remainder to surgery generally. Term: 3. Weight: 8; 2 for seminars only. *Stickel, Seigler, Amos, and staff*

**SUR-219(C). Advanced General and Thoracic Surgery (V.A. Hospital).** Special attention will be given to those subjects in surgery common to all medical

practices. Patients will be assigned to the students. The major emphasis will be on physiologic and pathologic changes, diagnosis, and the indications for operation. Every term. Weight: 8. *Postlethwait, Oldham, Fuchs, Seigler, Stickel, Scott Jones, and Wechsler*

**SUR-221(C). Surgical Specialties and Ophthalmology (V.A. Hospital).** The student will attend selected conferences of all the surgical specialties and ophthalmology. Additionally, the student will select two or three of these specialties in which to concentrate experience (on one service at a time) in the operating rooms, clinics, and wards of the V.A. Hospital, pathophysiology, diagnosis, and treatment will be emphasized. Every term. Weight: 8. *Carson, Chandler, Ganz, Lowell, Lucey, and Serafin*

**SUR-222(C). Clinical Dentistry.** Normal and abnormal development of head and oral structures. Importance of teeth for mastication, speech, and esthetics. Pediatric to geriatric dental disease, its prevention, examination, diagnosis, and treatment. Surgical correction and clinical management of oral surgical problems. Clinical duty. Every term. Weight: 1. *Quinn, Ross, Diehl, and Georgiade*

**SUR-223(C). Medical and Surgical Renal Disease.** Experience is offered in diagnosis and management of surgical diseases of the urinary tract and medical renal diseases with emphasis on clinical patient care. Participation in special urologic clinics and exposure to hemodialysis is offered with emphasis upon renal transplantation, renal failure, renovascular hypertension, and other aspects of medical and surgical disease. Every term. Weight: 8. *Glenn, Robinson, and respective staffs*

**SUR-227(C). Clinical Urologic Surgery.** The diagnosis, management, and surgical treatment of patients with urologic disorders will be stressed. Students will be afforded intimate association with the entire staff in the clinics, wards, and operating rooms and will participate in surgery. Cystoscopic and urographic diagnostic methods along with other techniques will be taught. Every term. Weight: 8. *Glenn, Dees, Anderson, Paulson, Weinerth, and Older*

**SUR-230(C). Seminar in Urologic Diseases and Techniques.** Lecture-seminar course by members of the staff in urology and radiology, providing an introduction to the spectrum of urologic diseases, amplified by demonstration of urologic and radiologic diagnostic methodology. Clinical problems to be stressed include endocrinopathies, pediatric urology, obstructive uropathies, renovascular hypertension, urinary calculi, and urologic malignancies. Informal seminars given weekly. Every term. Weight: 2. *Glenn, Anderson, Paulson, Weinerth, Older, Carson, and staff*

**SUR-233(C). Basic Neurosurgery Course.** Disease conditions commonly encountered in neurosurgery are presented. Clinical presentation of a common neurological disorder, such as brain tumor or head injury, is made by a member of the staff. Clinical features and plan of diagnostic investigation are stressed. The clinical disorder is used as a focal point from which to carry the presentation into the basic sciences are related to the clinical problem. Terms: 1, 2, 3, or 4. Weight: 1. *Wilkins, Cook, Kramer, Oakes, and Ganz*

**SUR-235(C). Clinical Neurosurgery.** Course is designed for those students with future interest in the neurological sciences. Duties include the workup and care of inpatients, workup of clinic patients, assistants in the operating room, daily rounds, and night call. Weekly conferences are held in neurosurgery, neurology, neuropathology, and neuroradiology, that are also special lectures. Every term. Weight: 8. *Wilkins, Nashold, Cook, Kramer, Oakes, and Ganz*

**SUR-237(C). Investigative Neurosurgery.** The student is assigned a project relating to the neurological sciences and, within reason, is provided with technical

help, recording equipment, and experimental animals necessary for its completion. Each student plans and executes an individual project, with the help of the neurosurgery staff. Attendance at weekly conferences is required. Terms: 1, 2, 3, or 4. Weight: 8. *Wilkins, Nashold, Cook, and Kramer*

**SUR-239(C). Clinical Otolaryngology.** This course will provide the student with a comprehensive survey of clinical otolaryngology. Duties will include participation in both outpatient clinic activities and inpatient care in addition to assisting in the operating room. The student will participate in ward rounds and in the various conferences held by the division. Every term. Weight: 4 or 8. *Hudson, Kenan, Cole, Farmer, and Lowell*

**SUR-240(C). Otolaryngologic Seminar.** This conference and demonstration course will provide an introduction to a variety of clinical problems in otolaryngology. Lectures will be supplemented with case presentations illustrating problems encountered in this field. Every term. Weight: 1. *Hudson, Kenan, Cole, and Farmer*

**SUR-242(C). Psychophysiology of Hearing.** An examination of the relation of anatomy and physiology of the central auditory system to auditory discriminations. Original papers on neuroanatomy, electrophysiology, and psychophysics of hearing will be read and discussed. Also listed as Psychology 321 in *Graduate School Bulletin*. Terms: 3 and 4. Weight: 3. *Casseday*

**SUR-245(C). Reconstructive Plastic Surgery.** Study of broad principles of trauma, wounding, healing, and varied reparative processes. Every term. Weight: 8. *Georgiade, Pickrell, Serafin, and Sherin*

**SUR-255(C). Medical Speech/Language Pathology and Audiology.** Theory and clinical practice in the evaluation and rehabilitation of theory of disorders of communication including disorders of hearing, childhood language, articulation, stuttering, aphasia, voice, laryngectomy, craniofacial anomalies, and other conditions resulting in deficits of communication. Every term. Weight: 1. *Kunze and Weber*

**SUR-259(C). General Principles of Orthopaedics.** A full-time or part-time experience on the orthopaedic service with duties and responsibilities similar to a junior intern. Inpatient care, outpatient examination, and operating room experiences are included. Individual or group discussions each day with attending staff. The purpose of the course is to present broad concepts of orthopaedics to students planning general practice, pediatrics, allied surgical specialties, or orthopaedics. Every term. Weight: 4 or 8. *Goldner, Clippinger, McCollum, Bassett, Urbaniak, Harrelson, Bright, and staff*

**SUR-261(C). Office and Ambulatory Orthopaedics.** A full or part-time experience on the orthopaedic service with duties and responsibilities similar to a junior intern. Inpatient care, outpatient examination, and operating room experiences are included. Individual or group discussions each day with attending staff. The purpose of the course is to offer clinical experience to students who have completed the seminar portion of Surgery 259(C). Rotations will be similar to those of Surgery 259(C). Terms: 2 or 4. Weight: 8. *Bassett, Clippinger, Goldner, McCollum, Urbaniak, Bugg, Coonrad, Lincoln, Glasson, Lang, Frank, Harrelson, and Bright*

**SUR-267(C). Clinical Conference in Cerebral Palsy and Children's Orthopaedics.** Conference is arranged for those interested in neurological disease, pediatric orthopaedic problems, and related fields. These conferences demonstrate both the individual and group approach to the patient with complex neurologic conditions as it effects both growth and development. Outpatients and inpatients are utilized for subject material. Staff personnel readily available for individual



seminars. Terms: 1, 2, 3, or 4. Weight: 2 or 4. *Coonrad, Bassett, Goldner, and Cerebral Palsy Staff*

**SUR-275(C). Electromyography.** This course is an introduction to the theory, techniques, and practice of clinical electromyography. Conference and demonstrations are the principle methods of instruction. The student participates in all phases of diagnostic study and learns the indications for use of electromyography as well as the interpretation of data. Every term. Weight: 2. *Clippinger, Urbaniak, and Orthopaedic Staff*

**SUR-276(C). Advanced Clerkship in Pediatric Surgery.** This course is designed to familiarize the student with the whole range of surgical problems in children but with emphasis on the pathophysiology of surgical and related problems in the newborn infant and the total care of the child with a malignancy. Although the course may be taken for the full eight weeks it is strongly recommended that it be combined with four weeks of Advanced Surgical Clerkship (Surgery 299C) or with four weeks of neonatology (Pediatrics 225C) depending on the interests of the student. Every term. Weight: 4 or 8. *Filston*

**SUR-277(C). Orthopaedic Research.** Individual projects are assigned for completion during a limited period of time. A student works with an investigator in the orthopaedic laboratory either at Duke Medical Center or the Durham V.A. Hospital. Clinical investigative studies are also available at both institutions. Every term. Weight: 8. *Goldner, Urbaniak, Bright, Harrelson, Ruderman, Orthopaedic Senior Staff, and House Staff*

**SUR-281(C). Introduction to Fractures and Musculoskeletal Trauma.** Students will participate in the emergency management of patients through the Duke Emergency Room primarily, but also through Durham County General and the Durham V.A. Hospitals. Principles of fractures in trauma will be given throughout the week at specified times and attendance at fracture clinic will be required. Every term. Weight: 3. *Entire Senior Staff at Duke and Durham County General, Supervision by Dr. Goldner at Duke, Dr. Lucey at V.A., and Dr. Coonrad at Durham County General*

**SUR-291(C). Cancer: Community and Family Medicine, Obstetrics-Gynecology, Pediatrics, Pathology, Radiology, and Surgery Aspects.** Taught by an interdepartmental faculty, this course consists of weekly seminars, Thursday 3:00-5:00 p.m. and conferences on Wednesdays 12:00 noon-1:00 p.m., and Saturday 8:30-9:30 a.m. in clinical and related basic aspects of oncology; and ward and clinic experiences in diagnosis and treatment (remaining time). The student may elect one clinical department for the ward and clinical experiences or work in an experimental oncology laboratory. Terms: 1, 2, 3, and 4. Weight: 8 hours—full course; two seminars and conferences. *Shingleton, Heyden, Johnston, Farmer, Silberman, and Metzgar*

**SUR-299(C). Advanced Surgical Clerkship.** This course is structured to provide the student with a comprehensive approach to surgical disorders. Each student will choose to work in the clinics, or on the wards, in the operating rooms and in the laboratory with one senior surgeon for eight weeks. Advanced concepts in surgery will be taught and problem-solving techniques will be demonstrated. Every term at discretion of instructor. Weight: 4-B. *Sabiston, S. Jones, Oldham, Peete, Postlethwait, Sealy, Seigler, Shingleton, Stickel, Young, Wells, Wolfe, R. Jones, Fuchs, Cox, Grant, and Akwari*

**SUR-301(C). Emergency Department Surgical Care.** Students desiring additional experience working with care of emergency surgical patients will be assigned to the emergency department one night per week for each credit desired.



They will participate in the diagnosis and care of acute and traumatic surgical emergencies. Every term. Weight: 1-3. *Moylan*

**SUR-303(C). Trauma Service.** This course is designed to provide students interested in trauma care with further experience both in the Emergency Department and on the inpatient Trauma Service. The course will emphasize both triage and resuscitation for major and minor emergency problems in the Emergency Department and also preoperative and postoperative care on the inpatient Trauma Service. The student will have a full-time experience by assuming duties and responsibilities similar to a junior intern. Emphasis will be placed on developing skills in the care of patients with multisystem injuries in the Emergency Department, Inpatient Service, and Operating Room. Students will work in conjunction with the attending staff and the senior assistant trauma resident. Every term. Weight: 8. *Moylan*

**SUR-304(C). Nutrition in the Hospitalized Patient.** This course is designed to acquaint students with the techniques of nutritional assessment including somatic protein, visceral protein mass, body fat mass, immune competence, and metabolic balance studies. Students will learn to determine basal energy expenditure and nitrogen requirements. The metabolic effects of acute and chronic starvation as well as stress and infection and the role played by these events in the hospital course of patients will be studied. Emphasis will be placed on techniques of nutritional support including routine and specialized hospital diets, routine and modular tube feeding diets, peripheral intravenous protein sparing, and total parenteral nutrition. Students will perform nutritional assessments on assigned hospitalized patients and be responsible for providing and monitoring nutritional support under supervision. At the completion of the course, students will have a thorough grasp of clinical nutrition and be able to apply specialized oral diets, tube feeding diets, and intravenous nutrition. Terms: 3 and 4. Weight: 2. *Grant*

## Special Interdisciplinary Training Programs

**BSP-201(B). Biobehavioral Study Program.** The focus of the program will be to obtain an understanding of basic processes underlying normal and pathological human behavior. The year-long or two-term experience is designed to familiarize the medical student with significant developments in the behavioral sciences, investigative methodology used to examine human behavior, and the application of findings to medicine. Each student will be given the opportunity to focus on some determinant of human behavior which may include biological, psychological, developmental, or social factors. The major portion of the student's time will be spent in closely supervised library or laboratory research in an area of the student's interest, resulting in the preparation of a report of the work. To augment the specific interest of the student, either through seminars or guided readings, familiarity with current issues in the biobehavioral sciences will be emphasized. Students enrolled in this program may take courses given in the medical and graduate schools, and it is expected that they will integrate and balance their work with some courses of general medical importance. The faculty for the Biobehavioral Study Program is a multidisciplinary group representing several departments of the Medical School and the University and is involved in a broad range of interests in individual and group behavior. Students are encouraged to contact faculty members prior to enrollment in this study program to investigate areas of mutual interest that will form the basis for the supervised research experience.

The following outline describes material from which topics may be chosen for individual research or for discussion in the seminar or guided reading portion of the course. Additional areas, not listed, may be considered.

1. Orientation to Research in the Biobehavioral Sciences. Assumptions; measurements; history and philosophy of science; application of computer technology in biobehavioral research.
2. Psychological, Biochemical, Endocrinological, and Psychopharmacological Correlates of Behavior. Methods and techniques; role of autonomic arousal as relating to psychophysiological experiments; interrelations of CNS and ANS functioning; neurochemical and pharmacological factors affecting normal and abnormal feeling states, states of awareness, cognition, memory, and psychomotor manifestations; effect of CNS catecholamines, hormones, and behavior; correlations between serum levels of psychotropic drugs and their metabolites and behavior response to drugs; platelet MAO, acetylation capacity, total body clearance of antidepressive agents; behavioral untoward effects of psychotropic drugs and their relationships to personality, serum levels of these drugs, and biochemical effects.
3. Personality and Individual Differences. Personality theories, psychopathology.
4. Cognitive processes. Intelligence, perception, cognition, ability, learning and development.
5. Groups and Social Processes. Social pattern and communication; social deviance; psychological studies of minority groups, sociology of life cycle changes; group psychotherapy. Every term. Weight: 9 units per term.  
*Program Director: Clifford*

**CVS-201(B). Cardiovascular-Respiratory Sciences Study Program.** The Study Program in Cardiovascular-Respiratory Sciences (CVS) is designed to offer third-year students instruction for one academic year in basic sciences as applied to the understanding of the cardiovascular and respiratory systems in health and disease. The program is interdepartmental in nature and will constitute a full credit load for those students who participate. It is comprised of three parts that run concurrently.

1. Individual Tutorial. The student will identify with a senior member of the medical school faculty who is participating in the program and whose field of work is in the cardiovascular or respiratory area. The major part of the educational program for the student will be in the form of individual tutorials with this member of the staff. This tutorial may range from full-time independent research to an intensive study experience for the student. The student and the tutor will develop a plan and the student will review it with the director of the program.
2. Group Seminar. A seminar series will be developed according to the needs and desires of the students, the purpose of which is to read and discuss selected papers and/or discuss problems and topics which arise in the course of the lectures or are complementary to them. Students will be active participants in the seminar, and through this mechanism it is hoped to integrate knowledge of cellular physiology and pharmacology into an understanding of organ system function and control.
3. Lecture Courses. The following courses are required: The Heart and Peripheral Circulation (207), and the Respiratory System in Health and Disease (208). These courses in cardiovascular and respiratory physiology will present selected topics in cardiovascular and respiratory physiology including analysis and evaluation of experimental and clinical studies relating to selected diseases of circulation, cardiac electrophysiology and arrhythmias, ventricular-atrial function, congenital disordered function and coronary blood flow, pulmonary mechanics, central and peripheral

regulation of ventilation, pulmonary circulation and respiratory responses to exercise, altitude, and hyperbaric environments.

The above plan provides a structured and recommended curriculum design. Within this framework multiple pathways are available because of the concentration of effort in the tutorial experience. Tutorials can be arranged within any of the basic science departments or with individuals in clinical departments whose orientation or research is consistent with the goals of the program. Once a tutor is identified, added flexibility is gained by having the option to elect courses in addition to the required course in physiology and pharmacology or to elect seminars in addition to the group seminar. Terms: 1, 2, 3, and 4. Weight: 9 units per term. *Program Director: P. Anderson*

**DDS-201(B). Development and Differentiation Study Program.** Objectives: recent advances in molecular and cell biology provide new concepts in the area of developmental biology. This program is designed to give the medical student an appreciation of the phenomena of development as well as advanced training in a variety of biomedical disciplines. In order to provide a comprehensive coverage for many areas the program has been organized on a multidisciplinary level.

Particular emphasis is placed on the biochemistry of the cell surface as a basis of cell recognition, control of the cell cycle, and overall tissue organization. An analysis of protein nucleic acid interactions in chromosome structure and function are considered in the light of newer concepts of transcriptional and translational control. Studies also include nuclear cytoplasmic interactions as well as hormone induction of differentiation and development. The rapidly expanding body of knowledge gained from these approaches will be examined by the medical student





through seminars as well as the opportunity for direct observations in the laboratories of participating faculty. The program provides an opportunity for the medical student to obtain an introduction to advanced training or research in a field of study of interest, including hematology, endocrinology, pediatrics, and immunology.

The program can be selected by the student for one or two semesters. First Semester: the first semester will consist of (1) a series of lectures given three times a week to cover basic principles, (2) a series of seminars conducted by the students under the guidance of the faculty, and (3) the opportunity to work in laboratories of the participating faculty. The student will learn through direct observation, participation, and discussion with the staff.

The students will meet Monday, Wednesday, and Friday at 11:20-12:10 to attend the introductory course in development and differentiation. This course covers basic principles and is taught by the entire faculty for the purpose of establishing a firm foundation for the more advanced studies to be given in the second semester. The students will also prepare and attend seminars in differentiation and development. These seminars will be conducted by the students under the guidance of the faculty.

The students will also have ten to twelve weeks of laboratory rotation. This laboratory rotation will be through the laboratories of the participating faculty. The experience will occupy three to five hours per week and will consist of a series of laboratory experiments to learn through direct observation, participation, and discussion with the staff of each laboratory. The experiments are carefully selected to provide an opportunity for the student to become familiar with different types of research material, as well as specific laboratory techniques. Most important, however, the student has the opportunity not only to learn experimental design but to become familiar with unique sources of material.

Upon entrance into the program the student will be interviewed by the faculty to suggest a program that will complement a future medical career. Students may also elect to spend part of their time in a library project under close faculty supervision, to be presented in an indepth seminar. As a general rule, mornings are reserved for course work and the afternoons for laboratory or library tutorials.

Second Semester: the students in the second semester will attend an advanced course in development (#224) as well as other appropriate courses comprising the study program. It should be emphasized that the student is provided considerable flexibility in this program since there is no penalty for taking eighteen hours of course work for the first semester only. Terms: 1 and 2 required; 3 and 4 optional. Weight: 18 per semester. *Co-Chairmen: McCarty and Counce*

**END-201(B). Endocrinology and Reproductive Biology Study Program.** This interdepartmental program is designed to provide third year medical students with an opportunity for indepth study of cellular endocrinology, neuroendocrinology, and reproductive biology as these relate to the function of the endocrine and reproductive systems in health and disease. In this program, major emphasis is placed on development of a plan of independent study for each student which is based on a tutorial or preceptorial association with an individual member of the program faculty. In addition, all members of the program, including faculty, meet regularly for seminars, discussions, and guest lectures on selected topics of interest to the entire group. PHS 417 and 418 are an integral part of the program. A student normally spends four terms in the program and receives full credit for the medical school advanced basic science requirement. Although the program traditionally begins in September, its structure is potentially flexible enough to accommodate those who wish to begin in any term, including the summer terms. It should be emphasized that while the primary aim of the program is to provide an intensive experience in endocrinology and reproductive biology,



opportunity is provided within the program format for students to broaden their basic science background by taking courses which may be unrelated to the subject matter of the study program.

For all students, the program consists of the following components:

1. **An Individual Tutorial.** This is carried out in association with one or more senior faculty members selected by the student and generally involves laboratory research in a particular area of endocrinology or reproductive biology. Before entering the program, students are asked to complete their tutorial arrangements. In order to facilitate this process, the Program Director will, on request, direct students to appropriate members of the program faculty or other members of the Medical School faculty whose specialty and research interests would permit them to participate in the program.
2. **The Seminar.** Held monthly throughout the academic year, the seminar covers various topics in endocrinology and reproduction in a format designed to explore current concepts, primarily through critical reading and discussion of contemporary literature. The seminar utilizes the background and experience of all members of the program faculty, guest speakers, and active student participation to develop an integrated approach to basic problems in endocrinology and reproductive biology. Taken as a whole, the seminar series provides broad coverage of endocrine phenomena from a cell biology viewpoint. The application of basic concepts to clinical problems and human disease is considered to provide continuity with future clinical training.
3. **Lecture Courses.** PHS 417, Cellular Endocrinology, and PHS 418, Reproductive Biology, are specific course requirements in this program. In order to provide additional breadth of preclinical experience related to immediate or long-term interests, students are encouraged to take up to four units of course work per term. As noted above, individual course selections are not limited to those related to endocrinology or reproductive biology, although consultation with the preceptor is recommended before making final selections. Every term. Weight: 9 units per term. *Program Director: Lebovitz*

**EPI-201(B). Epidemiology Study Program.** Epidemiology is the study of the distribution and determinants of disease occurrence in human populations. The epidemiology study program aims to provide a basic grounding in principles and methods. Seminars, lectures, and research projects are combined to provide an intensive experience in quantitative approaches to the study of health and disease in populations.

Epidemiology is a science of growing importance for the initial identification of causal associations and the formulation of new etiologic hypotheses. Epidemiologists are also increasingly recognized as specialists in research design and data analysis for studies of human populations. The epidemiologic approach particularly lends itself to interdisciplinary research, as it borrows heavily from fields such as genetics, pathology, and immunology. Students will therefore be encouraged to take one or more basic science courses outside of the study program.

The program will have a core of required courses and seminars supplemented by elective tutorials in areas of special interest. The required courses focus on epidemiologic and biostatistical research methods. Tutorials will take the form either of participation in ongoing research projects or of individual supervised studies. Such study topics will be carefully selected so that they may be completed in a reasonable period of time and lead to publication of results.

Program Core (Required Courses)

1. *Epidemiologic Principles and Methods*. Instructors: Grufferman, Kimm. Texts—MacMahon and Pugh: *Epidemiology, Principles and Methods*, and Lilienfeld: *Foundations of Epidemiology*. Topics covered in this intensive course will include the study of the distribution of diseases in populations, issues in study design, data collection, and methods of analysis. Modules on the subjects of case-control, cohort and cross-sectional studies, clinical trials and intervention studies will be presented. Methods will also be introduced for assessing and dealing with bias, misclassification and confounding. Lectures will be supplemented by outside readings, seminars, and student presentations. (Same as CHS-240(B).)
2. *Biostatistics in the Medical Sciences*. Instructors: Myers, Wilkinson. Statistical principles and methods and their use in the health sciences, with particular emphasis on methods applicable to the design and analysis of epidemiologic studies. Topics covered include: point estimation, confidence intervals and tests of statistical significance for rates and ratios as measures of disease risk; life-table analyses; variable selection techniques; multivariate models for disease risk. (Also listed as CHS-215(B).)
3. *Topics in Epidemiologic Research (Seminar)*. Instructor: Grufferman. The seminar will focus on problems in design and conduct of epidemiologic studies and analysis of data. Discussion will be based on faculty and student research projects and supplemented by selected readings. Faculty from the Department of Epidemiology at the University of North Carolina School of Public Health and visiting scientists will be invited to present their work at the seminars. Emphasis will be placed on critical analyses of epidemiologic studies. The range of topics will expose the student to all major aspects of epidemiology (e.g., areas of communicable disease, mental illness, chronic disease). Open only to program participants.
4. *Research Projects in Epidemiology*. Instructor: Grufferman. Students are required to participate in ongoing research projects or to conduct supervised studies of their own. Each student will work closely with an appointed preceptor. Emphasis will be on projects which can be completed in a reasonable period of time and may lead to publication.

Program Core (Optional Course)

5. *Nutrition Epidemiology*. Instructor: Kimm. Nutrition epidemiology may be defined as the study of the role of the nutrition factor in the *casual web* of illness patterns in human populations. This course offers a systematic review of population approaches to the study of nutrition. Currently, most nutrition courses are primarily concerned with studies using *in vitro* laboratory techniques, animal models, or individual human subjects, with minimal emphasis on human population groups in their natural environments. In the course, an emphasis will be placed on methods available for chronic disease epidemiologic research since most nutritional disorders in man are basically chronic. Particular attention will be directed to principles of research design and critical analyses of selected studies. It is hoped that at the completion of the course, the student will be prepared to design and conduct population-based studies on human nutrition. (Same as CFM-242(B).)

All courses with the exception of Topics of Epidemiology Research Seminar will be open to students outside of the program. Every term. Weight: 9 units per term. *Program Director: Dr. Seymour Grufferman*

**ISP-201(B). Immunology Study Program.** Objectives: this study program is designed for students whose career goals lie in one of the many clinical specialties which interface broadly with immunology: allergy-immunology, infectious diseases, rheumatology, hematology, transplantation, and oncology. A general fund

of information is provided in the core course, Medical Immunology (MIC-330B), which emphasizes the role of immunologic mechanisms in various human disease states. Each student chooses a faculty preceptor, with whom an original research project is worked. It is encouraged that the student not be injected into the continuum of the preceptor's research interests but, rather, that an individual project is developed which can be completed during the study program. This laboratory effort may continue for two to four terms. The primary goals of the program are to encourage and develop the student's own creativity, so that the research interests and philosophies of the entire division are introduced to help the student gain a useful personal perspective on current immunologic thought with an emphasis on clinical relevance.

The student's efforts and time are divided as follows:

1. Preceptorship. The major emphasis of the program, during which the student functions much as a graduate student in the division. 30 hours or more per week.
2. Medical Immunology (MIC-330B). The basic concepts of immunochemistry and immunobiology are reviewed in the first two weeks, and the remainder of the course describes the role of these concepts in the pathogenesis and treatment of several human disease states. Emphasis is given to tumor immunology, immunohematology, immunologic deficiency diseases, neuroimmunology, transplantation, autoimmunity, inflammation, and allergy. Patient presentations when applicable. Because the course meets daily, more than superficial coverage of the topics can be achieved. 5 hours per week. Terms: 3 and 4.
3. Seminars for Research Progress. Throughout the year each faculty member, fellow, and student in the division presents a brief informal seminar on on-going research. The discussion that follows is of great help to the presenter and allows the student to observe and participate in critical analysis of research before it is at the polished publication or formal seminar stage. 1 hour per week.
4. Immunology Division Seminar. A series of formal seminars by division faculty and visiting scientists. 1-2 hours per week.
5. Additional Course Work. The student may elect to take any of several courses in immunology and related fields, but is generally discouraged from excessively diluting the laboratory experience. Terms: 3 and 4 or longer. Weight: 9 units per term. *Levy*

**NSS-201(B). Neurosciences Study Program.** The Neurosciences Study Program is an interdepartmental, interdisciplinary program designed to coordinate the study of neurobiology in the third year curriculum. The program permits the student an opportunity for independent study and growth in neurobiology under the guidance of several basic science faculty members engaged in research on the nervous system. In recent years significant developments in molecular biology, electron microscopy, neurophysiology, and neurochemistry have given us an approach to the understanding of neural and muscular function at a cellular and subcellular level. These developments provide hope for a greater understanding of the biologic basis of brain, nerve, and muscle function and tremendously increase our need for well-trained physicians to understand the fundamental basis of neurobiology for careers relevant to the specific area as well as to all of medicine.

The program will last for thirty-two weeks. Participation in the program will require active participation in a neurobiology study group tutorial and in a preceptorship with one of the basic science faculty members. The major emphasis of the program will be on individual laboratory research training under the preceptorship of one of the members of the training staff. In addition, the trainee in consultation with the preceptor will be encouraged to enroll in one or two



courses relevant to the trainee's special interests and career plans. A wide range of projects are available for interested students. For physiologic approaches to the nervous system, the laboratories of Dr. George Somjen, Dr. Lorne Mendell, Dr. Wilkie Wilson, Dr. John Moore, Dr. Frans Jöbsis, and Dr. Wesley Cook are available. For pharmacology, the laboratories of Dr. Saul Schanberg and Dr. James Davis, for anatomical pathological studies, the laboratories of Dr. J. David Robertson, Dr. F. Stephen Vogel, Dr. Emma Jakoi, Dr. Richard Marchase, and Dr. Fred Schachat are available. For virologic studies, the laboratories of Dr. Darell Bigner and Dr. Nelson Levy, are available. For biochemical studies, the laboratories of Dr. Ara Tourian, Dr. Norman Kirshner, Dr. Allen Roses, Dr. Jacqueline Reynolds, Dr. Charles Tanford, Dr. Bernard Kaufman, and Dr. James McNamara are available.

The neurobiology study group tutorial will permit students to gain understanding of several different aspects of neurologic science as well as topics in the biology of behavior. The range of topics include pertinent subjects of neuroscientific relevance such as aspects of macromolecular synthesis, neural development and function, neural subsystems and physiologic operations, communication and coding in the nervous system, recognition and control at a molecular level, and selected aspects of molecular neurobiology. The neurosciences course and seminar programs for the neurology and neurosurgery resident training programs are open to NSP students.





At the beginning of their laboratory experience, all students submit their research protocol and at the termination all students submit a paper describing their work and accomplishments during the year. Students are encouraged to attend one meeting on a national level thought by their preceptors to be essential to the educational experience in the neurosciences. Terms: 1, 2, 3, and 4. Weight: 9 units per term. *Director: Roses*

**VSP-201(B). Virology Study Program.** Objective: to indicate the relevance of investigative virology to problems of clinical medicine and to provide an introduction to recent advances in virus research. The student's efforts and time are divided as follows:

1. Lectures and Seminars: Students will take MIC-301(B), Principles of Infections Diseases. (6 hours per week.)

This is a lecture and seminar course designed to familiarize students with the basic biologic concepts, the pathogenesis and the clinical manifestations of infectious diseases caused by bacteria viruses, fungi, rickettsia, and selected parasites. The host defenses to infectious agents including the acute inflammatory response and humoral and cellular immunity, and current future trends in the development of vaccines and antimicrobial and antiviral agents will also be discussed.

2. Other Courses. Students in the program will have an option to take one additional relevant lecture course, approved by the course directors.
3. Individual Tutorial. During the remainder of the time each student will be supervised by a faculty member participating in the program in a study project. It is believed that it would be most beneficial for a student to carry out a laboratory research project. Lectures and seminars have been planned so that students can spend at least five to six hours each day in the laboratory. In the case that the program directors would approve of a project of a different nature, the student again would be supervised by one of the participating faculty members. In a study project of this kind, a student might be expected to take more than one additional relevant course. Terms: 1 and 2. Weight: 9 units per term. *Program Co-Chairmen: Keene and Lang*

**IND-300(B) or (C). Interdisciplinary Seminar in Medical-Legal-Ethical Issues.** The seminar will be composed of students in approximately equal number from the Medical, Divinity, and Law Schools, and will explore important medical, legal, and ethical features of current issues (e.g., transplantation, euthanasia, abortion). Faculty and resource persons from all three schools will participate in the seminar. Up to four introductory sessions in the fall semester for all participating students and faculty will be concluded with arrangement of interdisciplinary terms and selected topics. Student teams will meet during the winter and consult at intervals with faculty. All seminar participants will reassemble for a series of weekly meetings, ending in mid-March, to present and discuss the topics researched. Any topics, properly focused, may be considered. Terms: 2 and 3. Weight: 2. *Dyer (Medical), Shimm (Law), Smith (Divinity), and other faculty members from all three schools*



# School of Nursing



## The Nursing Programs

**Bachelor of Science in Nursing.** The School of Nursing offers a four-year course of study leading to the degree of Bachelor of Science in Nursing. Thirty-two courses including small-group learning experiences and thirteen upper division required courses in nursing are necessary to complete the program.

The first two years of the curriculum consist of required courses and elective courses in liberal arts, basic sciences, or nursing. The third and fourth years consist of the required courses in the nursing major, with provision for electives in the arts, sciences, or nursing. Opportunities are provided for students to undertake independent studies in nursing or other areas of interest.

Early in the junior year, students participate in clinical nursing practice where they acquire knowledge, skills, and attitudes appropriate for professional nursing. Provision for elective courses in most semesters enables the student to pursue a secondary or complementary field of interest, including the opportunity to acquire a second major. Option to pursue electives in nursing provides the opportunity for each student to begin in an area of concentration in clinical nursing.

Graduates are eligible to apply for examination for licensure as registered nurses in any state. Additional information may be obtained by writing for the Duke University *Bulletin of Undergraduate Instruction*.

**Master of Science in Nursing.** The Master of Science in Nursing program prepares nurses to assume major leadership roles in the improvement of methods of delivery and the quality of health care of selected target populations in a chosen setting or settings. The practice sites of students can encompass all stages and phases of health and illness as experienced by people as individuals, and as members of families, groups, complex organizations, and communities.

The faculty believes that graduate education best takes place in an environment which fosters a combination of wisdom and imagination and promotes curiosity and freedom to innovate, rather than one which is limited to the acquisition of knowledge and skills which are required for practice in the present.

The graduate of the program, regardless of the chosen area of clinical interest, will be expected to: (1) demonstrate expertise in a defined area of practice, (2) conduct inquiry into the nature of health and the practice of nursing, (3) employ strategic approaches to changing social systems for the improvement of health



care, and (4) collaborate in the formulation of health policies and the delivery of health care.

The curricular plan emphasizes flexibility within a basic structure to best afford the realization of students' varying professional goals. Students concentrating on selected areas of nursing practice design the clinical component of the core courses in a manner suited to the achievement of their specified goals, but they also participate in seminars with student peers.

The program is three semesters in length for a full-time student and can be completed within one calendar year. Part-time study is available with program completion expected in three years. Clinical facilities and learning resources in the Medical Center and surrounding community are varied and easily accessible.

*Curriculum Plan.* First semester: Research and Theory Development in Nursing I (4 units); A Systems Perspective for Nursing, Practice I (5 units); two electives (6 units). Second semester: Research and Theory Development in Nursing II (4 units); A Systems Perspective for Nursing Practice II (5 units); one-two electives and/or thesis (6 units). Third semester: clinical practicum (10 units); elective or thesis (3 units).

Electives may be nursing or non-nursing courses. A thesis option may be pursued in lieu of 6 units of electives.

Students completing the program will be awarded a Master of Science in Nursing degree and will be prepared to function as clinical specialists. For those seeking positions in teaching, an additional semester of courses is available. An administration of nursing services program is being developed.

*Admission Requirements.* (1) Bachelor's degree with an upper division major in nursing from a National League for Nursing accredited program; (2) an undergraduate scholastic average of B or better; (3) satisfactory performance on the Graduate Record Examination Aptitude Test; (4) an introductory course in descriptive and inferential statistics; (5) registration as a professional nurse in North Carolina.

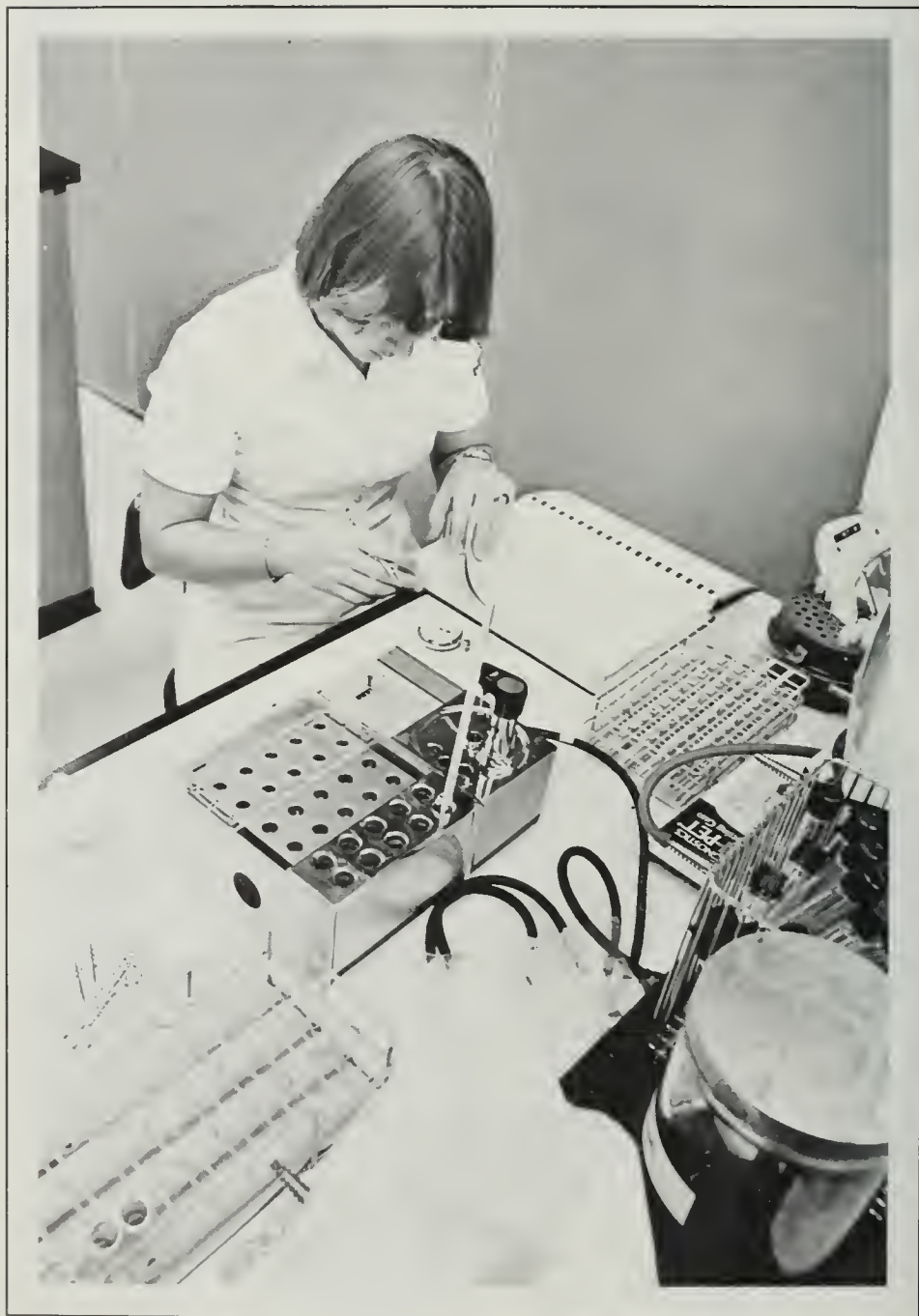
*Dates for Application.* An application with all supporting documents must be submitted by 1 August for fall semester admission; 15 November for spring semester admission; 15 March for summer session admission. (Spring and summer part-time study only.)

*Tuition and Financial Aid.* Tuition is \$155 per unit. A number of federal traineeships are available to qualified students for full-time study.





# Allied Health Division





## The Allied Health Programs

The health-services educational programs offered at the Duke University Medical Center that are neither medicine nor nursing are coordinated by the Division of Allied Health. Every effort is made to keep each of these allied health programs closely related to the Medical School departments whose fields they serve.

In recognition of the growing need for fully qualified teachers, and of the fact that the facilities at Duke are limited as to the number of programs and students they will accommodate, increasing emphasis is being given to degree programs. The Bachelor of Health Science degree is now available to qualified students in the Physician's Associate Program, Medical Technology Program, the Anesthesia Program, and Pathologist's Assistant Program and has been authorized for additional programs as warranted. In qualifying for the B.H.S. degree, the courses taken must meet the University's standards of quality, rigor, and relevance.

A number of Allied Health Programs are cosponsored by the adjacent V.A. Hospital. The V.A. has constructed and equipped a modern educational facility on its hospital grounds where a large portion of the classes for certain allied health programs are held.

Current University tuition is charged for the master's and bachelor's degree programs. Students enrolled in certificate courses are usually charged a token course fee. A nonrefundable registration fee is charged. Due to the spiraling cost of medical and allied health education, tuition or course fees may be changed without prior notice.

The major allied health programs are briefly described below. More information about individual programs is contained in the *Bulletin of Duke University, 1979-80, Allied Health Programs* and is available upon request. Inquiries regarding specific programs should be directed as indicated for each program; general inquiries relating to two or more programs should be addressed to Allied Health Education, Duke University Medical Center, Durham, North Carolina 27710.

## Bachelor of Health Science Degree Programs

**Medical Technology.** This two-year program provides both academic theory and instruction in the performance of laboratory procedures which yield patient data used in evaluating total health care. The curriculum is structured so that the student may apply knowledge in the basic sciences toward a Bachelor of Health Sciences (B.H.S.) degree in medical technology, in both the junior and senior years.



Educational techniques, instrumentation, and supervision-management courses are included in the curriculum. Further information and application form requests should be directed to the Program Director, Medical Technology Program, Box 3712, Duke University Medical Center, Durham, North Carolina 27710.

**Anesthesia Program.** In 1931, the Department of Anesthesiology established a program for registered nurses to further their study in anesthesia. Heretofore this program was at the certificate level; beginning in September, 1979, a B.H.S. degree will be implemented. Students learn about the physiopharmacological effects of anesthesia and related drugs, the proper techniques for their administration, and the management of an entire treatment plan for patients requiring anesthesia. The program is two academic years and two summers in length with summers being required for certification and not the B.H.S. degree. Upon completion of the program, graduates are awarded a B.H.S. degree and a Certificate in Anesthesia. Graduates are eligible to take the National Certification Examination for Nurse Anesthetists to become Certified Registered Nurse Anesthetists (CRNAs).

Requests for further information and application forms should be addressed to the Director, The Anesthesia Program, Box 3094, Duke University Medical Center, Durham, North Carolina 27710.

**Pathologist's Assistant.** The Pathologist's Assistant Program is designed to meet the growing need for trained personnel to assist the pathologist in the areas of clinical diagnosis and anatomical pathology. Upon completion of the program, students will have acquired knowledge and skills that will permit them to fill important roles in the medical field. The pathologist is a physician and scientist whose primary functions are the study, research, and diagnosis of disease, and customarily has the responsibility for the direction of clinical anatomical pathology and surgical pathology services in the hospital. Requests for further information and application forms should be directed to the Director, Pathologist's Assistant Program, Department of Pathology, Box 3712, Duke University Medical Center, Durham, North Carolina 27710.

**Physician's Associate.** More than a decade ago, clinicians at Duke University Medical Center concerned with the application of new diagnostic and therapeutic procedures, found they could safely and effectively delegate many of their tasks to nonphysicians. The physician's associate possesses a broad understanding of medicine and health care. Students are chosen on the basis of their demonstrated commitment to providing health care, academic potential, and ability to communicate with patients. These innate strengths are developed during the two years of study. At the end of this time, the graduate physician's associate is able to interrelate with patients to obtain a thorough history and physical examination, to record this information, and to present it clearly to a physician. In addition, physician's associates provide patient care services such as cast application and removal, wound suturing, dressing changes, after-hour laboratory studies, and assessing and monitoring the progress of ill patients. Duke University Medical Center awards the Bachelor of Health Science degree to those students who have the necessary number of undergraduate hours at the time of matriculation and a certificate to all students upon completion of the Physician's Associate Program. Requests for further information and application forms should be directed to: Director of Admissions, Physician's Associate Program, P.O. Box 2914, Duke University Medical Center, Durham, North Carolina 27710.

## Master's Degree Programs

**Health Administration.** The profession of health administration emerged early in this century in response to the increasing demand for health services. Over

the years several specific areas of health administration have been identified, most notably; public health administration, hospital administration, medical care organization, and comprehensive health planning. All of these require a common set of managerial skills and a broad knowledge of the health system and its environment. It has been estimated that the system requires approximately 60,000 individuals in positions involving health administration. In recognition of the complexity and importance of hospitals, Duke University established the first graduate program in the nation for the training of hospital administrators in 1930. Requests for further information and application forms should be directed to the Graduate School, (Health Administration) 127 Allen Building, Duke University, Durham, North Carolina 27706.

**Physical Therapy.** The Master of Science degree program is designed to provide a broad foundation in the art and science of physical therapy and to provide opportunities for the development of skills in health administration and supervision, curriculum development, and directed teaching in physical therapy, and in advanced clinical education or research. The program is approved by the Council on Medical Education of the American Medical Association in collaboration with the American Physical Therapy Association. Requests for applications and further information should be directed to the Director of Graduate Studies, Department of Physical Therapy, Box 3965, Duke University Medical Center, Durham, North Carolina 27710.

## Certificate Programs

**Clinical Psychology Internship.** The Division of Medical Psychology, in cooperation with the Division of Child Psychiatry, Highland Hospital, and the Durham Veterans Administration Hospital, offers internship training in clinical psychology to qualified doctoral students. The program, approved by the American Psychological Association, provides experience in many contexts with a wide diversity of patients. Internship training emphasizes experience in the traditional activities of clinical psychologists: assessment, consultation, psychotherapy, and research. Those successfully completing the requirements for internship will be awarded a Duke University Medical Center certificate. Correspondence concerning admission to the program should be directed to the Director, Clinical Psychology Internship Program, Box 3903, Duke University Medical Center, Durham, North Carolina 27710.

**Speech Pathology-Audiology Resident Program.** This program is patterned after the medical resident programs and provides the certified speech pathologist or audiologist an opportunity to develop an area of specialization beyond the general practice skills developed during the professional training. Organic communication disorders are emphasized, including: neurogenic communication disorders, craniofacial disorders, organic voice disorders, childhood language disorders and audiologic disorders. Emphasis is placed on the development of advanced clinical evaluation and treatment skills. Seminars, lectures, and other study opportunities are provided as each resident demonstrates the need for theoretical knowledge underlying clinical procedures. Requests for further information and application forms should be directed to: Director of Post-Masters Studies, Center for Speech and Hearing Disorders, Box 3523, Duke University Medical Center, Durham, North Carolina 27710.

**Cytotechnology.** Progress in the early detection of cancer by the microscopic examination of smears of cell samplings, especially from the female genital tract, has resulted in the specialty of cytotechnology. The cytotechnologist deals with the technical and diagnostic aspects of exfoliative cytology. Graduates of the

program are awarded a certificate and are eligible to take the certifying examinations given by the Registry of Medical Technologists of the American Society of Clinical Pathologists. Requests for further information and application forms should be directed to the Director, Cytotechnology Program, Department of Pathology, Box 3712, Duke University Medical Center, Durham, North Carolina 27710.

**Electrophysiologic Technology.** In 1961, Duke University Medical Center began its formal program in electrophysiological technology as an expansion of the inservice training program begun in 1955 at the Durham Veterans Administration Hospital. Every year the laboratories in the Medical Center perform over 4,000 examinations including investigative procedures during brain surgery. Upon successful completion of this program, graduates are awarded a certificate and become eligible to take the certifying examination given by the American Board of Registration of Electroencephalographic Technologists. Requests for further information and application forms should be directed to the Director, Electrophysiologic Laboratory, Box 3838, Duke University Medical Center, Durham, North Carolina 27710.

**Health Administrators Management Improvement Program.** The Health Administrators Management Improvement Program (HAMIP) is conducted by the Department of Health Administration at Duke University specifically to strengthen the management skills of practicing hospital administrators who have not completed formal university-based education in hospital administration. It is designed to allow the working administrator to acquire skills and knowledge for more effective management of the hospital with a minimum of time away from the job. A certificate is awarded for successful completion of the program. Forms may be obtained from Coordinator, Health Administrators Management Improvement Program, Box 3018, Duke University Medical Center, Durham, North Carolina 27710.

**Hospital and Clinical Pharmacy Residency.** The Hospital and Clinical Pharmacy Residency is a twelve-month postbaccalaureate program conducted by the Department of Pharmacy. The residency is designed to give the graduate pharmacist experience in the administrative aspects of hospital pharmacy and to offer advanced training in clinical pharmacy practice. Management of modern drug dispensing systems, such as computerized unit dose drug distribution, an intravenous admixture program, and a hyperalimentation team and a radiopharmacy laboratory is emphasized. Considerable experience in the patient-care setting is obtained. Strengthening of leadership capabilities is stressed in the residency. Requests for further information and application forms should be directed to the Director, Department of Pharmacy, Box 3089, Duke University Medical Center, Durham, North Carolina 27710.

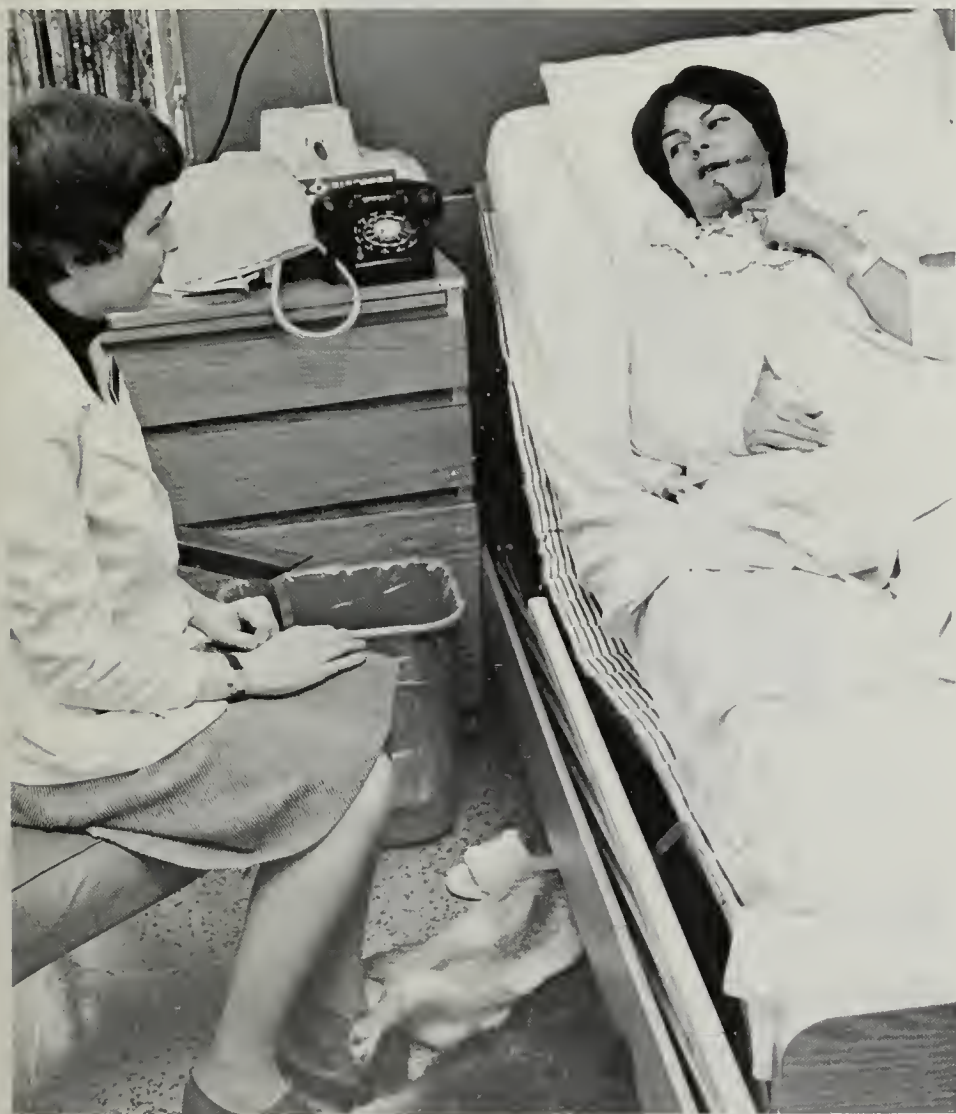
**Nuclear Medicine Technology.** In the fall of 1967, the Division of Nuclear Medicine in the Department of Radiology of the Duke Medical Center began a full-year program in Nuclear Medicine Technology. This program is approved by the American Medical Association, and upon completion of studies the student is awarded a certificate and becomes eligible to take the ARRT and ASCP registry examinations in nuclear medicine technology. Requests for further information and application forms should be directed to the Director, Nuclear Medicine Technology Program, Allied Health Education Building, V.A. Hospital, Durham, North Carolina 27705.

**Pastoral Care and Counseling.** A graduate program in pastoral care and counseling is available to clergy of all religious groups. There are four program options: a single unit or clinical pastoral education, an internship, a residency, and



a fellowship. All are designed to train ordained individuals who desire to specialize in pastoral care and counseling or to enhance their skills as parish clergy. Those who enroll in the program will be required to serve as chaplains or as pastoral counselors in the Medical Center or in the community of Durham. All program options are approved by the Association for Clinical Pastoral Education, Inc. Requests for application and further information about any of the programs should be directed to the Director of Pastoral Care and Counseling Programs, Box 3112, Duke University Medical Center, Durham, North Carolina 27710.

**Radiologic Technology Programs.** The Duke University Medical Center and the Durham V.A. Hospital offer two radiologic technology programs: a twenty-four-month certificate training program and a twelve-month postgraduate advanced training program. Requests for further information regarding these programs should be directed to the Technical Director, Radiologic Technology Programs, Box 3108, Duke University Medical Center, Durham, North Carolina 27710.







# Appendix

## ROSTER OF HOUSE STAFF BY DEPARTMENTS

### Anesthesiology

Chief Resident: Benzion Schkolne, M.B., Ch.B. (Univ. of Capetown, South Africa, 1972).

Senior Resident: Robert H. A. Ballin, M.D. (Karolinska Institute, Sweden, 1965).

Junior Residents: Hun Taek Chung, M.D., (Yonsei Univ., Korea, 1972); Lynn D. George, M.D. (George Washington Univ., 1956); Sally June Hauser, M.D. (Jefferson Med. Coll., 1977); John B. Leslie, M.D. (Duke, 1976); Hany H. Louka, M.D. (Cairo Univ., Egypt, 1971); Michael Matchett, M.D. (Kentucky, 1977); John V. Parham, M.D. (Mississippi, 1978); Charles W. Plummer, M.D. (Duke, 1978); Kanibhai S. Patel, M.D. (B.J. Med. Coll., India, 1964); Ziaur Rahman, M.D. (Prince of Wales Med. Coll., India, 1968); Teodulo Remandaban, M.D. (Cebu Inst. of Med., Philippines, 1972); Anil M. Vyas, M.D. (Government Med. Coll., India, 1972).

### Family Medicine

Chief Residents: Susan E. Brown, M.D. (Georgetown, 1976); Gregg A. Warshaw, M.D. (Michigan, 1976).

Residents: Kathryn M. Andolsek, M.D. (Northwestern, 1976); Evan A. Ballard, M.D. (Duke, 1976); William J. Blackley, M.D. (North Carolina at Chapel Hill, 1976); Marjorie A. Bowman, M.D. (Jefferson, 1976); Howard T. Chatterton, M.D., Ph.D. (Duke, 1976); Timothy D. Coughlin, M.D. (Cincinnati, 1972); John C. Dickinson, M.D. (Columbia, 1975); Joseph Fesperman, M.D. (North Carolina at Chapel Hill, 1977); Scott I. Feuer, M.D. (New York, Downstate Med. Center, 1977); Raymond A. Gaskins, Jr., M.D. (North Carolina at Chapel Hill, 1976); Richard S. Goldberg, M.D. (Michigan, 1976); E. Wilson Griffin III, M.D. (Duke, 1978); John R. Hartman, M.D. (Miami, 1976); James K. Hartye, M.D. (Vanderbilt, 1977); Frances E. Hayes, M.D., (Tufts, 1978); Pamela H. Jessup, M.D. (Bowman Gray, 1977); Mary A. Kane, M.D. (Columbia, 1977); Ita M. Killeen, M.D. (Maryland, 1977); Katherine C. Krause, M.D. (Jefferson, 1978); Walter L. Larimore, M.D. (Louisiana, 1978); Nancy H. Lewis, M.D. (Case Western Reserve, 1978); Michael K. Magill, M.D. (Duke, 1977); Charlea T. Massion, M.D. (Case Western Reserve, 1978); George H. Maxted, M.D. (Wayne State, 1977); Stephen C. McDonnell, M.D. (Miami, 1978); James L. Michener, M.D. (Harvard, 1978); Bruce D. Nash, M.D. (Albany, 1978); John E. Neal, M.D. (Duke, 1976); Lynn C. Parker, M.D. (Hahnemann, 1977); Eric A. Pyeritz, M.D. (Pittsburgh, 1978); Robert L. Rhyne, M.D. (New Mexico, 1977); Robert L. Schmitz, M.D. (Washington Univ., 1978); Jessica L. Schorr, M.D. (Tufts, 1977); Colleen F. Selig, M.D. (Boston, 1977); Thomas N. Shelburne, M.D. (Duke, 1978); Stephen J. Spann, M.D. (Baylor, 1975); Alan R. Storeygard, M.D. (Mayo, 1977); Ann L. Todd, M.D. (Georgetown, 1978); Frank Worlax, M.D. (Duke, 1976).

### Medicine

Chief Residents: Jeffrey Crawford, M.D. (Ohio, 1974); David A. Hester, M.D. (Oklahoma, 1973).

Senior Residents: Paul K. Anderson, M.D. (Tulane, 1976); Keith E. Berger, M.D. (Duke, 1976); Lawrence W. Biel, M.D. (Illinois, 1976); David F. Boerner, M.D. (Pennsylvania, 1976); Scott W. Bowman, M.D. (Jefferson, 1976); Charles N. Brown, M.D. (Texas, 1976); Carmine V. Dalto, M.D. (New York Univ., 1976); Mark Dellasega, M.D. (Kansas, 1976); Philip H. Dunn, M.D. (Duke, 1976); Anthony

Fouts, M.D. (Duke, 1974); Jan P. Goldberg, M.D. (Colorado, 1976); William Gough, M.D. (Rochester, 1976); Robert L. Heacock, M.D. (Ohio, 1976); J. Wesley Jones, M.D., (Duke, 1976); Paul E. Klotman, M.D. (Indiana, 1976); Mark J. Knapp, M.D. (Wayne State, 1976); Sharon D. Luikart, M.D. (Duke, 1976); Ann L. Peterson, M.D. (Oklahoma, 1976); Lonard C. Rigsby, M.D. (Alabama, 1977); Lakhi M. Sakhrani, M.D. (Albert Einstein, 1976); Thomas J. Santoro, M.D. (New York Univ., 1976); Maury K. Topolosky, M.D. (Ohio, 1976); Christopher D. Truss, M.D. (Alabama, 1976); John H. Ward, M.D. (Utah, 1976).

Junior Residents: J. Trig Brown, M.D. (Washington Univ., 1977); Mark B. Edelstein, M.D. (Washington Univ., 1975); Michael G. Ehrie, M.D. (Louisville, 1974); Timothy C. Evans, M.D. (Michigan, 1974); John M. Fedor, M.D. (Duke, 1976); Bonnie J. Goodwin, M.D. (Dartmouth, 1977); Bruce D. Hettleman, M.D. (Harvard, 1977); Wendy A. Keitel, M.D. (Duke, 1977); Stephen K. Lucas, M.D. (Harvard, 1977); Cheryl Mahony, M.D. (Duke, 1976); Robert E. McCabe, M.D. (Harvard, 1976); Janice G. McFarland, M.D. (Oregon, 1977); Jeffrey R. Medoff, M.D. (New York Medical Coll., 1977); G. Radford Moeller, M.D. (Duke, 1977); Mark B. Moeller, M.D. (Dartmouth, 1977); Wendy P. Moeller, M.D. (Duke, 1977); Alan I. Nussbaum, M.D. (Harvard, 1977); W. Neal Roberts, M.D. (Virginia, 1977); Tracey A. Rouault, M.D. (Duke, 1977); John F. Ryan, M.D. (Brooklyn, 1977); Michael A. Salvatore, M.D. (Arizona, 1977); T. Duncan Sellers, M.D. (Duke, 1977); Cheolsu Shin, M.D. (Alabama, 1977); Robert S. Siegel, M.D. (George Washington, 1977); Stephen M. Teague, M.D. (Illinois, 1977); Dwain L. Thiele, M.D. (Baylor, 1977); Lloyd Townsend, M.D. (Western Reserve, 1977); Joe L. Trantham, M.D. (Duke, 1976); Bret C. Williams, M.D. (Kansas, 1976); Michael J. Zachek, M.D. (Georgetown, 1977).

Interns: Nancy B. Allen, M.D. (Tufts, 1978); Joseph J. Billadello, M.D. (Georgetown, 1978); David R. Bishop, M.D. (Michigan, 1978); William A. Bornstein, M.D. (Georgia, 1976); Dale E. Bredesen, M.D. (Duke, 1977); Eliot A. Brinton, M.D. (Utah, 1978); Gary V. Burton, M.D. (Utah, 1978); Joseph Y. Cheung, M.D. (Duke, 1978); Mark S. Currie, M.D. (Southwestern, 1978); David J. Dunbar, M.D. (Ohio, 1978); David S. Grierson, M.D. (Ohio, 1978); James J. Hines, M.D. (Northwestern, 1978); Robert L. Huck, M.D. (Washington Univ., 1978); Phillip E. Jones, M.D. (Emory, 1978); William B. Lide, M.D. (Johns Hopkins, 1978); Jeffrey L. Mathews, M.D. (Utah, 1978); Albert B. Mercer, M.D. (Louisville, 1978); Dale E. Merrell, M.D. (Pennsylvania, 1978); Mary L. Michels, M.D. (Ohio, 1978); J. Randall Moorman, M.D. (Mississippi, 1978); Allyn Nakashima, M.D. (Utah, 1978); William N. Newman, M.D. (Duke, 1977); Anton P. Nielsen, M.D. (Duke, 1977); Jeb S. Pickard, M.D. (Louisville, 1978); Thomas A. Reichert, M.D. (Miami, 1978); Steven F. Roark, M.D. (Duke, 1977); Marshall deG. Ruffin, M.D. (Harvard, 1978); Guadalupe Sanchez, M.D. (Harvard, 1978); Rose Shalom, M.D. (Harvard, 1978); James A. Sherwood, M.D. (Columbia, 1978); David S. Shimm, M.D. (Duke, 1978); Warren Silverman, M.D. (Albany, 1978); Bernadette Simpson, M.D. (New York Med. Coll., 1978); M. Lynn Smiley, M.D. (Duke, 1978); James Sosnowich, M.D. (Ohio, 1978); James W. Whitfield, M.D. (Missouri, 1978); Eugene E. Wright, M.D. (Duke, 1978); Ruth T. Young, M.D. (Tennessee, 1977).

Fellows: Jeffrey M. Ambinder, M.D. (New York, 1975); Carroll D. Arnett, Ph.D. (Maryland, 1976); Edward Baptist, Ph.D. (Massachusetts Inst. of Tech., 1973); Robert R. Birdwell, M.D. (Southwestern, 1974); Theresa Blumfelder, M.D. (Missouri, 1973); B. Alton Brantley, M.D. (Duke, 1978); Warner M. Birch, M.D. (Bowman Gray, 1971); Gary H. Burke, M.D. (Virginia, 1975); Mary C. Byrne, Ph.D. (Temple, 1977); Martin J. Conley, M.D. (Duke, 1973); G. Ralph Corey, M.D. (Baylor, 1973); Albert O. Davies, M.D. (Utah, 1975); Dwight Davis, M.D. (Rochester, 1975); Michael C. Dillon, M.D. (Kentucky, 1975); Mary L. Dohrmann, M.D. (Missouri, 1974); Michael D. Erisman, Ph.D. (California at San Diego, 1978); Roderick M. Farb, Ph.D. (Alabama, 1976); Arnold J. Felsenfeld, M.D. (Duke, 1971); Theodore D. Fraker, M.D. (Ohio, 1973); Bruce A. Freeman, Ph.D. (California, 1978); Raymond J. Gibbons, M.D. (Harvard, 1976); Joel F. Ginsberg, M.D. (Georgia, 1975); Hernan D. Giraldo, M.D. (Univ. of Antioquia, 1971); Augustus O. Grant, M.D. (Univ. of Edinburgh, 1971); Steven Grossman, M.D. (Med. Coll. of Virginia, 1973); David D. Grove, M.D. (Chicago, 1970); C. Earl Guthrow, M.D. (Pennsylvania, 1969); Stephen C. Hammill, M.D. (Colorado, 1974); Michael Hamrell, Ph.D. (Univ. of So. California, 1977); Arthur Hancock, Ph.D. (Pennsylvania, 1977); Phillip J. Harris, M.D. (Univ. of Sydney, 1973); David G. Harrison, M.D. (Oklahoma, 1974); Gholamhossain Hayatdavoudi, M.D. (Pahlavi Med. School, 1971); Robert E. Hickman, M.D. (Harvard, 1971); Thomas Higgins, M.D. (North Carolina at Chapel Hill, 1974); Michael C. Hindman, M.D. (Illinois, 1973); Wu Yen Hung, Ph.D. (Mississippi, 1972); Loren W. Hunt, M.D. (Indiana, 1973); Mitsuo Itakura, M.D. (Univ. of Tokyo, 1973); Richard S. Kent, M.D. (California, 1975); Robert B. Kirkpatrick, M.D. (Washington Univ., 1974); George Klein, M.D. (Univ. of Toronto, 1972); Scott A. Kremers, M.D. (Indiana, 1974); Russell Lane, M.D. (Univ. of Newcastle, 1973); Selwyn Lang, M.D. (Univ. of Otago, 1967); Len B. Lastinger, M.D. (Emory, 1970); Jeanne L. Lesiewicz, Ph.D. (Delaware, 1975); Robert M. Lester, M.D. (Duke, 1973); Kristine M. Lohr, M.D. (Rochester, 1975); Nickolas R. Loon, M.D. (Trinity Coll., Dublin, 1971); Kenneth W. Lyles, M.D. (Med. Coll. of Virginia, 1974); Adrian P. Manning, M.D. (Univ. of Bristol, 1972); Gale McCarty, M.D. (Duke, 1974); William McCumbee, Ph.D. (Houston); Patricia McEwan, M.D. (Univ. of Toronto, 1972); John W. McKeown, M.D. (Tennessee, 1973); David S. Mendelson, M.D. (Ohio State, 1973); Kenneth Morris, M.D. (Ohio, 1972); Maria Morzycka, M.D. (Med. Academy, 1968); Saood Murad, Ph.D. (Univ. of California, 1968); Joseph J. Muscato, M.D. (Pennsylvania, 1975); Mary S. Muscato, M.D. (Pennsylvania, 1975); Walter J. Newman, M.D. (Duke, 1975) Stuart H. Packer, M.D. (State Univ. of New York, Downstate Med. Center); Sebastian T. Palmeri, M.D. (Georgetown, 1975); Frank S. Pancotto, M.D. (Chicago, 1975); Charles J. Parker, M.D. (North Carolina at Chapel Hill, 1975);



John P. Parker, M.D. (Ohio, 1973); John R. Perfect, M.D. (Med. Coll. of Ohio, 1974); Kathryn A. Peroutka, M.D. (Maryland, 1975); Steven Port, M.D. (Mt. Sinai, 1972); Eric Prystowsky, M.D. (Mt. Sinai, 1973); Charles M. Rhodes, M.D. (Cornell, 1974); Lewis J. Rubin, M.D. (Albert Einstein, 1975); Douglas D. Schocken, M.D. (Duke, 1973); Eric B. Schoomaker, M.D. (Michigan, 1976); Michael B. Shipley, M.D. (Duke, 1974); William V. Singletary, M.D. (Duke, 1975); David A. Slosky, M.D. (Colorado, 1976); Warren M. Smith, M.D. (Univ. of Otago, 1968); Yogambal Srinivasan, Ph.D. (Indiana Inst. of Sci., 1977); Jeffrey Stadel, Ph.D. (Pennsylvania, 1977); James A. Stewart, M.D. (Saskatchewan, 1972); Gary L. Stiles, M.D. (Vanderbilt, 1975); Judith L. Swain, M.D. (California at San Diego, 1974); Nguyen D. Thieu, M.D. (Howard, 1975); Charlotte Thomas, Ph.D. (Mississippi, 1976); Cornelius B. Thomas, M.D. (Duke, 1973); Michele M. Thomas, M.D. (Duke, 1974); John R. Ticehurst, M.D. (Duke, 1977); Mark Upton, M.D. (McGill, 1973); Steven L. Vest, M.D. (Minnesota, 1974); Henry R. Wagner, Ph.D. (New Mexico, 1975); Penn Watkinson, Ph.D. (Virginia, 1978); Richard Whitesell, Ph.D. (Vanderbilt, 1976); Eddie M. Williams, M.D. (Duke, 1974); R. Sanders Williams, M.D. (Duke, 1974); James G. Wilson, M.D. (Mississippi, 1975); Jeffrey W. Wilson, M.D. (Duke, 1972); Neal Kent Wise, M.D. (Illinois, 1973); Kin C. Wong, M.D. (Nat'l. Defense Med. Ctr., 1972); Pierre Wong, Ph.D. (Indiana, 1975); James E. Wortman, M.D. (Northwestern, 1974).

## DIVISION OF DERMATOLOGY

Alexander Chiaramonti, M.D. (Michigan, 1976); Madeleine Duvic, M.D. (Duke, 1977); Junius B. Goslen III, M.D. (North Carolina at Chapel Hill, 1973); Janet G. Hickman, M.D. (Harvard, 1971); Dennis M. Hull, M.D. (Harvard, 1974); John M. Humeniuk, M.D. (Univ. of Manitoba, 1977); Patricia A. Marchase, M.D. (Cornell, 1977); Michael D. Tharp, M.D. (Ohio State, 1974); James W. Trimble, M.D. (Florida, 1977).

## DIVISION OF NEUROLOGY

Andrew C. Bragdon, M.D. (Washington Univ., 1977); Joseph Blankenship, M.D. (Tennessee, 1977); Richard M. Dasheiff, M.D. (Maryland, 1976); Miles E. Drake, M.D. (Duke, 1977); Ugo Goetzl, M.D. (New York Med. Coll., 1968); Matthew D. Gold, M.D. (Cornell, 1975); Lindy E. Harrell, M.D. (Miami, 1977); Keith L. Hull, Jr., M.D., (Duke, 1975); John S. Luther, M.D. (North Carolina at Chapel Hill, 1974); Barbara Scherokman, M.D. (Med. Coll. of Georgia, 1975); Robert S. Tillett, M.D. (Louisville, 1975).

## Obstetrics and Gynecology

Chief Residents: Elizabeth R. Baker, M.D. (Duke, 1975); Daniel Clarke-Pearson, M.D. (Case, 1975); Linda A. Clayton, M.D. (Duke, 1975); Richard Forth, M.D. (Duke, 1975); Henry F. Gober, M.D. (Duke, 1975); David A. Nagey, M.D., Ph.D. (Duke, 1975).

Assistant Residents: Margaret Dydek, M.D. (Duke, 1978); Michele Dudzinsky, M.D. (Boston, 1978); Timothy Edwards, M.D. (Bowman-Gray, 1978); Rochelle Filker, M.D. (Florida, 1978); Kenneth Fortier, M.D. (Dartmouth, 1976); Jose Garcia-Saul, M.D. (Duke, 1977); Sarah Hainline, M.D. (Duke, 1978); Vanessa Haygood, M.D. (Harvard, 1978); John W. Lane, M.D. (Duke, 1972); Stephen C. Lies, M.D. (Duke, 1976); Charles H. Livengood III, M.D. (Duke, 1976); Michael W. Prystowsky, M.D. (New York Med. Coll., 1977); Gregory P. Sutton, M.D. (Michigan, 1976); Bertram E. Walls, M.D. (Duke, 1976); Daniel B. Whitesides, M.D. (Duke, 1976); Paul W. Zarutskie, M.D. (Hahnemann Med. Coll., 1976); Nicholas Zornek, M.D. (State Univ. of New York at Buffalo, 1977).

Faculty Fellows: John Currie, M.D. (North Carolina at Chapel Hill, 1967); Martin M. Quigley, M.D. (Georgetown, 1971); Thomas Vaughn, M.D. (Univ. of Texas Medical Branch, 1974).

## Ophthalmology

Chief Residents on rotating basis.

Residents: John R. Sonntag, M.D. (Temple, 1974); Glen O. Brindley, M.D. (Texas, 1975); William A. MacIwaine IV, M.D. (Virginia, 1975); James M. Mitchell, M.D. (Duke, 1976).

Assistant Residents: Thomas L. Beardsley, M.D. (Duke, 1977); Stanley D. Braverman, M.D. (Miami, 1976); Edward G. Buckley, M.D. (Duke, 1977); Frank H. Christensen, M.D. (St. Louis, 1976); George S. Ellis, Jr., M.D. (Tulane, 1977); Sidney L. Gullledge III, M.D. (Bowman Gray, 1976); James E. Holland, M.D. (Missouri, 1975); James A. Knupp, M.D. (Ohio, 1978); J. Stuart McCracken, M.D. (Duke, 1975); James A. Salisbury, M.D. (Tulane, 1977); Howard N. Short, M.D. (St. Louis, 1978); James S. Tiedeman, M.D. (Duke, 1977).

## Pathology

Residents: C. Bruce Alexander, M.D. (Virginia, 1971); Thomas K. Barton, M.D. (Duke, 1976); William Bell, M.D. (Duke, 1978); Michael J. Borowitz, M.D., Ph.D. (Duke, 1977); J. Hartley Bowen, M.D. (Jefferson, 1977); Martha C. Bryan, M.D. (Med. Univ. of South Carolina, 1976); Bennet D. Cecil, M.D. (Univ. of Louisville, 1977); Dorwyn W. Croom, M.D. (Washington Univ., 1976); Eric L. Decker,



M.D. (Univ. of Rochester, 1978); Richard M. Draffin, M.D. (Duke, 1975); William H. Gibson, M.D. (Duke, 1977); Cornelia W. Hamilton, M.D. (Michigan, 1974); William F. Hamilton, M.D. (Univ. of Miami, 1975); William A. Lamb, M.D. (Chicago); Steven E. Levine, M.D. (Indiana, 1978); Thomas R. Mattison, M.D. (Southwestern, 1976); Jeffrey A. Mossler, M.D. (Indiana, 1977); Beverly J. Myers, M.D. (Duke, 1977); William C. Pfister, M.D. (Duke, 1975); Kenneth S. Piech, M.D. (Duke, 1976); Michael B. Rohlfing, M.D. (Illinois, 1977); Mark A. Shifman, M.D. (Med. Coll. of Ohio, 1978); John Spahr, M.D. (Hershey, 1975); Cheryl A. Szpak, M.D. (Univ. of Texas Southwestern, 1977); Arthur H. Tatum, M.D. (Duke, 1977), Ph.D. (Duke, 1976); Robert L. Trapasso, M.D. (State Univ. of New York at Syracuse, 1970), Ph.D. (Duke, 1976); Barbara J. Weinstein, M.D. (Duke, 1975); James O. White, M.D. (Emory, 1971); Charles L. Wisseman, M.D. (Pennsylvania, 1975); Brett H. Woodard, M.D. (Tulane, 1974); Richard J. Zaino, M.D. (Duke, 1975).

Fellows: Robert Farnham, M.D. (Pennsylvania, 1973); Elizabeth Kamenar, M.D. (Ohio State, 1975); Hannah C. Kinney, M.D. (Case Western Reserve, 1974); Andrew Kligerman, Ph.D. (Cornell, 1977); Alfred Sanfilippo, Ph.D. (Duke, 1975), M.D. (Duke, 1976); Stephen Strom, Ph.D. (Kansas, 1978).

## Pediatrics

Fellows: Brenda E. Armstrong, M.D. (St. Louis, 1974); Richard David, M.D. (Duke, 1974); Jeffrey Davis, M.D. (Pritzker, 1971); Roger G. Faix, M.D. (Cornell, 1975); Paul M. Fiser, M.D. (Arkansas, 1971); Avraham Golander, M.D. (Hebrew Univ., Israel, 1969); Shelby Josephs, M.D. (Duke, 1975); Alan P. Knutsen, M.D. (St. Louis, 1975); Herbert A. Lassiter, M.D. (Med. Coll. of Virginia, 1971); Virginia A. Little, M.D. (Alabama, 1975); Michael M. McCarthy, M.D. (Washington, 1976); Keith J. Peevy, M.D. (Louisiana, 1974); Betty Raffin, M.D. (California at Irvine, 1974); Hugh A. Sampson, M.D. (New York at Buffalo, 1975); Richard Sterba, M.D. (Ohio State, 1974); William Terry, M.D. (Columbia, 1974); Gerald M. Woods, M.D. (Duke, 1971); Joyce Wise, M.D. (Illinois, 1973).

Third Year Residents: Robert Ettinger, M.D. (Maryland, 1976); Michael Freemark, M.D. (Duke, 1976); William Greeley, M.D. (Texas at Houston, 1976); Barbara Miller, M.D. (Hershey, 1976); Robert A. Saul, M.D. (Colorado, 1976); Mitchell Shub, M.D. (Vermont, 1976); Corry Sibrack, M.D. (Michigan State, 1976); Mary Vernon, M.D. (Columbia, 1976); Alan Woolf, M.D. (Pritzker, 1976).

Second Year Residents: Patricia A. Cannon, M.D. (Duke, 1977); John A. Duncan, M.D. (South Florida, 1977); Thomas E. Durr, M.D. (Johns Hopkins, 1977); Gail H. Gallemore, M.D. (Duke, 1977); Larry C. Harris, M.D. (Duke, 1977); Lyndon Key, Jr., M.D. (North Carolina at Chapel Hill, 1977); Robert Maguire, M.D. (Temple, 1977); Linda J. Murphy, M.D. (Rochester, 1977); Barry L. Myones, M.D. (Albany, 1977); David Sherry, M.D. (Texas Tech., 1977).

First Year Residents: Sandra J. Becker, M.D. (Southwestern, 1978); Yuan-Tsong Chen, M.D., Ph.D. (National Taiwan Univ., 1973); Joseph G. Cramer, M.D. (Arizona, 1977); Barbara C. Erwin, M.D. (Baylor, 1978); Charles R. Gordon, M.D. (Columbia, 1978); Clinton H. Joiner, M.D., Ph.D. (Duke, 1977); Ward R. Rice, M.D., Ph.D. (Chicago, 1978); Craig R. Rudlin, M.D. (Harvard, 1978); Michael E. Ruff, M.D. (Texas, Galveston, 1978); Deborah L. Squire, M.D. (Northwestern, 1978); Robert W. Warren, M.D., Ph.D. (Washington Univ., 1978).

## Psychiatry

Chief Residents: Donald T. Neblett, M.D. (Tennessee, 1958); Edward J. Rhoads, M.D. (Duke, 1975); David B. Larson, M.D. (Temple, 1973).

Residents: Rudolph Addy, M.D. (Univ. of Ghana 1976); Peter Adland, M.D. (Georgetown, 1975); Richard Bagge, M.D. (Jefferson, 1971); Linda Boswell, M.D. (Louisiana, 1973); Ingrid Brantley, M.D. (Duke, 1973); Lucy Caudill, M.D. Duke, 1976); Richard Dalton, M.D. (Louisiana, 1975); Clifford Dopson, M.D. (Louisiana, 1975); George Dougherty, M.D. (Stanford, 1976); Robert Drake, M.D. (Duke, 1978); Wendy Fain, M.D. (Columbia, 1977); Conrad Fulkerson, M.D. (Missouri, 1967); David Fuller, M.D. (Washington Univ., 1973); Jim Gallagher, M.D. (Stritch, 1974); Bonny Gregory, M.D. (Georgia, 1978); Gary Henschen, M.D. (North Carolina at Chapel Hill, 1975); James Hillard, M.D. (Stanford, 1977); William Hoppe, M.D. (Creighton, 1976); Sally Johnson, M.D. (Jefferson, 1976); Robert Krause, M.D. (Duke, 1978); Gordon Lavin, M.D. (Case Western Reserve, 1978); Markku Linnoila, M.D. (Helsinki, 1972); Noni Lipson, M.D. (Michigan, 1977); Steve Mahorney, M.D. (Louisiana, 1974); Ben Moore, M.D. (Duke, 1975); Bruce Neeley, M.D., (South Carolina, 1975); Gregory O'Shanick, M.D. (Texas, 1977); Barbara Palmeri, M.D. (Duke, 1977); Peter Perault, M.D. (Vermont, 1977); Mike Petty, M.D. (Michigan, 1974); Andy Pumariega, M.D. (Miami, 1976); Thomas Robb, M.D. (Iowa, 1976); Daphne Rosenblitt, M.D. (Duke, 1973); John Shill, M.D. (Oxford, 1974); Dale Simpson, M.D. (John Hopkins, 1976); Robert Stewart, M.D. (Louisville, 1976); Cathy Suslavich, M.D. (Duke, 1977); John Urbach, M.D. (Michigan, 1977); James Whitman, M.D. (Wisconsin, 1977); Robert Winton, M.D. (Vanderbilt, 1972); Jason Worchel, M.D. (Southwestern, 1975); Charles Zeanah, M.D. (Tulane, 1977).

## Radiology

Chief Resident: Barry Powers, M.D. (New York Univ., 1975).

Residents: David C. H. Acquah, M.D. (Univ. of Ghana, 1972); Jerry Apple, M.D. (Duke, 1978); Andrew Beloni, M.D. (Rutgers, 1978); Jeffrey Blum, M.D. (Maryland, 1973); Clinton Briley, M.D. (North Carolina at Chapel Hill, 1977); Samuel Buff, M.D. (Duke, 1978); Harold Cable, M.D. (North Carolina at Chapel Hill, 1975); David Lee Call, M.D. (North Carolina at Chapel Hill, 1977); James H. Craft, M.D. (South Carolina, 1974); Maitland Deland, M.D. (Florida, 1978); George Dixon, M.D. (Duke, 1976); James R. Edinger, M.D. (Coll. of Osteopathic Med. and Surg., Des Moines, 1976); Arthur Fritz, M.D. (North Carolina at Chapel Hill, 1971); Michael Hewitt, M.D. (Rochester, 1978); Kenneth Hicks, Jr., M.D. (Tennessee, 1974); Norman Jacobs, M.D. (Temple, 1978); Donald Johnson, M.D. (West Virginia, 1974); Barry M. Lamont, M.D. (McGill, 1977); Eric McClees, M.D. (Duke, 1978); Thomas McCook, M.D. (Florida, 1978); Richard Max, M.D. (Rutgers, 1977); Paul Miller, M.D. (New York Med. Coll., 1976); Arl Van Moore, Jr., M.D. (Arkansas, 1974); Pamela A. Nelson, M.D. (North Carolina at Chapel Hill, 1977); Marvin Nielson, M.D. (Jefferson, 1974); Leroy Roberts, Jr. M.D. (Temple, 1975); Margaret Robinson, M.D. (Washington Univ., 1977); Bruce Rodan, M.D. (Miami, 1976); Eric Rosenberg, M.D. (New York Univ., 1975); Robert Schaaf, M.D. (Tufts, 1976); James Scheuer, M.D. (Colorado, 1977); Charles Strickler, M.D. (Washington Univ., 1978); Frank Suslavich, M.D. (Duke, 1977); David Tempkin, M.D. (Texas Southwestern, 1978); David Warner, M.D. (Northwestern, 1978); Lawrence Wolbarsht, M.D. (Tufts, 1975); Sabra Woodward, M.D. (North Carolina at Chapel Hill, 1976); Robert G. Zeller, M.D. (Maryland, 1976).

## Surgery

### DIVISION OF GENERAL AND THORACIC SURGERY

Instructors and Teaching Scholars: William C. DeVries, M.D. (Utah, 1970); Lynn H. Harrison, Jr., M.D. (Oklahoma, 1970).

Instructors and Chief Residents: John C. Alexander, Jr., M.D. (Duke, 1968); Dana K. Anderson, M.D. (Duke, 1971); Stephen A. Mills, M.D. (McGill, 1961); Norman A. Silverman, M.D. (Boston, 1971); Bruce M. Smith, M.D. (Harvard, 1971).

Fellows: Koho Akimaru, M.D. (Nippon Medical School, 1971); Charles E. Cox, M.D. (Utah, 1975); James M. Douglas, Jr., M.D. (Duke, 1978) John R. Farndon, M.B., B.S. (Univ. of Newcastle upon Tyne, 1978); John B. Hanks, M.D. (Rochester, 1973); Ronald C. Hill, M.D. (West Virginia, 1974); J. Dirk Iglehart, M.D. (Harvard, 1975); Donald P. Jones, M.D. (Univ. of Toronto, 1972); Robert N. Jones, M.D. (Rush, 1976); Richard L. McCann, M.D. (Cornell, 1974); William C. Meyers, M.D. (Columbia, 1975); Paul A. Mutzner, M.D. (Univ. of Zurich, 1971); Glenn E. Newman, M.D. (Duke, 1973); Craig O. Olsen, M.D. (Utah, 1976); Claude A. Peter, M.D. (Strasbourg, 1972); Arthur J. Ross, M.D. (Case Western Reserve, 1975); James D. Sink, M.D. (Bowman Gray, 1975); J. Mark Williams, M.D. (Duke, 1976).

Senior Assistant Residents: L. George Alexander, M.D. (Duke, 1973); Earl H. Austin, M.D. (Harvard, 1974); Ralph R. Bollinger, M.D. (Tulane, 1970); Ralph M. Bolman III, M.D. (St. Louis, 1973); Walter R. Chitwood, Jr., M.D. (Virginia, 1974); Charles H. Edwards II, M.D. (North Carolina at Chapel Hill, 1973); Peter W. Graper, M.D. (McMaster, 1973); Walter D. Holder, Jr., M.D. (North Carolina at Chapel Hill, 1970); Richard A. Hopkins, M.D. (Duke, 1974); Walter Robin Howe, M.D. (Yale, 1971); Richard M. Larson, M.D. (Duke, 1974); James E. Lowe, M.D. (California at Los Angeles, 1973); Thomas A. Marsicano, M.D. (Ohio State, 1973); John F. Moran, M.D. (Washington, 1973); George A. Parker, M.D. (Boston, 1972); James S. Rankin, M.D. (Tennessee, 1969); Stephen K. Rerych, M.D. (Columbia, 1974); Larry A. Robinson, M.D. (Washington, 1972); Worthington G. Schenk III, M.D. (Duke, 1974); Peter M. Scholz, M.D. (Basel, 1974); Thomas L. Spray, M.D. (Duke, 1974); Robert L. R. Wesly, M.D. (Duke, 1975).

Assistant Residents: Beverly S. Adams, M.D. (Duke, 1976); Edwin S. Epstein, M.D. (Georgetown, 1977); Robert D. Francis, M.D. (Duke, 1977); William J. Hall, M.D. (Louisville, 1977); G. Byron Hodge, M.D. (Duke, 1977); Robert B. Peyton, M.D. (New York Univ., 1977); Peter K. Smith, M.D. (Duke, 1977); Peter M. Thurlow, M.D. (Harvard, 1977); M. Susan Tucker, M.D. (Texas, 1977); Ross M. Ungerleider, M.D. (Rush, 1977); Peter Van Trigt III, M.D. (Tulane, 1977); William T. Ward, M.D. (Pittsburgh, 1977).

First Year Residents: Kim C. Bertin, M.D. (Utah, 1978); David M. Drvaric, M.D. (Emory, 1978); Richard D. Floyd, M.D. (Duke, 1978); Kimball S. Fuiks, M.D. (Connecticut, 1978); William L. Holman, M.D. (Cornell, 1978); Vincent S. Mosca, M.D. (Rochester, 1978); Tom E. Nesbitt, Jr., M.D. (Georgetown, 1978); Richard B. North, M.D. (Johns Hopkins, 1973), Ph.D. (Johns Hopkins, 1978); Thomas L. Novick, M.D. (Duke, 1978); Kevin P. Rankin, M.D. (Temple, 1978); Mark J. Schacht, M.D. (Michigan, 1978); Bruce Shirmer, M.D. (Duke, 1978); Wendall H. Tiller, Jr., M.D. (Duke, 1978); George S. Tyson, M.D. (Duke, 1978).

### DIVISION OF NEUROSURGERY

Instructors and Chief Residents: Allen H. Friedman, M.D. (Illinois, 1974); Roger H. Ost Dahl, M.D. (Duke, 1973).

Fellows: Dennis E. Bullard, M.D. (St. Louis, 1975); Carol A. Ludolph, M.D. (Pennsylvania, 1976); John B. Mullen, M.D. (South Illinois, 1975).

Assistant Residents: Bennett Blumenkopf, M.D. (Boston, 1976); Elizabeth Bullitt, M.D. (Colorado, 1975); Alfred C. Higgins, M.D. (Georgetown, 1977).

#### DIVISION OF ORAL SURGERY

Instructor and Chief Resident: Edward A. Dolan, M.D. (Maryland, 1971).

Assistant Residents: Dieter W. Leipert, D.D.S. (Columbia, 1976); James Papaylanou, D.D.S. (Columbia, 1974).

#### DIVISION OF ORTHOPAEDIC SURGERY

Instructors and Chief Residents: David H. Bristow, M.D. (Virginia, 1971); Howard F. Davis, Jr., M.D. (Louisiana, 1970); William T. Hardaker Jr., M.D. (Duke, 1973); Louis A. Koman, M.D. (Duke, 1974); Thomas J. Limbird, M.D. (Duke, 1973); James A. Nunley III, M.D. (Tulane, 1973); William Stewart, M.D. (Mississippi, 1973); Terry L. Whipple, M.D. (Virginia, 1971).

Assistant Residents: Hendrick L. Arnold, M.D. (Tulane, 1971); James Aronson, M.D. (Pittsburgh, 1975); Stephen F. Beissinger, M.D. (Pittsburgh, 1975); Josephus T. Bloem, M.D. (Leiden Univ., 1974); Donald K. Bynum, M.D. (Texas at Houston, 1976); Ali A. Dini, M.D. (Pahlavi Univ., 1971); John P. Evans, M.D. (Minnesota, 1971); Robert D. Fitch, M.D. (Duke, 1976); Frank B. Fondren, Jr., M.D. (North Carolina at Chapel Hill, 1974); William E. Garrett, M.D. (Duke, 1976); Christopher M. Jobe, M.D. (Baylor, 1975); Larry G. Lipscomb, M.D. (Louisiana, 1975); Michael A. Lipton, M.D. (Columbia, 1973); Stephen B. Lowe, M.D. (North Carolina at Chapel Hill, 1976); Ronald J. Neimkin, M.D. (Cornell, 1975); Todd B. Orvald, M.D. (Jefferson, 1971); Anne B. Redfern, M.D. (Harvard, 1969); Guy L. Rutledge III, M.D. (Alabama, 1975); Roni Sehayik, M.D. (Upstate Medical Center, 1974); William A. Somer, M.D. (Duke, 1972); Paul V. Spiegl, M.D. (Wisconsin, 1976); Fredric H. Warren, M.D. (Arkansas, 1971); William N. Wessinger, M.D. (South Carolina, 1973); Peter W. Whitfield, M.D. (George Washington, 1974).

#### DIVISION OF OTOLARYNGOLOGY

Instructors and Chief Residents: Leo Callahan, M.D. (Georgetown, 1974); Harry L. King, M.D. (Virginia, 1974); Martin E. Levin, M.D. (Maryland, 1972).

Assistant Residents: Douglas G. Finn, M.D. (New York Med. Coll., 1975); Samuel R. Fisher, M.D. (Duke, 1975); William B. Klinke, M.D. (Texas Southwestern, 1974); John W. Loudermilk, M.D. (Texas Tech., 1975); Tseuneo Watanbe, M.D. (Keio Univ., Japan, 1974).

#### DIVISION OF PLASTIC AND MAXILLOFACIAL SURGERY

Instructors and Chief Residents: Richard O. Gregory, M.D. (Indiana, 1971); Richard Morris, M.D. (Oklahoma, 1966); Hans B. Norberg, M.D. (Oklahoma, 1969).

Assistant Residents: William Barwick, M.D. (Tennessee, 1971); Anthony DeFranzo, M.D. (George Washington, 1973); Gregory S. Georgiade, M.D. (Duke, 1973); William Lambeth, M.D. (North Carolina at Chapel Hill, 1971); Edward P. Polock, M.D. (West Virginia, 1971); Richard E. Sabatier, M.D. (Tulane, 1973); Paul J. Smith, M.B.B.S. (New Castle Univ., 1968); Ivan Thomas, M.D. (Pahlavi Univ., Iran, 1971).

#### DIVISION OF UROLOGIC SURGERY

Instructors and Chief Residents: Jean-Jacques Braedael, M.D. (Catholic Univ. Leuven School of Med., 1974); Charles Brendler, M.D. (Virginia, 1974); Craig Hinman, M.D. (Washington, 1973); Harold Reeve, M.D. (Pennsylvania, 1972).

Assistant Residents: Wayne A. Cline, M.D. (Bowman Gray, 1976); Sam D. Graham, M.D. (Virginia, 1974); Henry C. Hudson, M.D. (Alabama, 1975); Stephen S. Kramer, M.D. (Tulane, 1975); Gerald H. Lin, M.D. (National Taiwan Univ., 1973); W. Marston Linehan, M.D. (Oklahoma, 1974); E. Wynn Mabry, M.D. (Oklahoma, 1971); Matthew S. Smith, M.D. (Georgetown, 1975); Sigmund Tannebaum, M.D. (Duke, 1975).



# Roster of Students

## Class of 1979

Alexander, Christian Miller (Oberlin), Madison, Wisconsin  
Bailey, Genie Lark (Meredith), Kenly, North Carolina  
Baker, Charles Scott, III (North Carolina at Chapel Hill), Havelock, North Carolina  
Bartels, George Thomas (North Carolina at Chapel Hill), Chapel Hill, North Carolina  
Battle, Juan Francisco (Duke), Santo Domingo, Dominican Republic  
Becker, Robert L., Jr. (Miami), Columbus, Ohio  
Bishopric, Nanette Hahr (Duke), Sarasota, Florida  
Bradley, Betty Lou Bruton (North Carolina at Chapel Hill), Carrboro, North Carolina  
Brody, Gordon Alexander (Duke), New York, New York  
Burton, Claude Shreve, III (Davidson), Durham, North Carolina  
Cappleman, William Franklin, III (North Carolina at Chapel Hill), Carrboro, North Carolina  
Cassell, Robert Holland (Harvard), Atlanta, Georgia  
Chua, Cynthia Coe (Mt. Holyoke), Lake Katrine, New York  
Clarkson, Lindsay Livingston (Radcliffe), Glen Head, New York  
Colvard, David Fred (Georgia Inst. of Tech.), Durham, North Carolina  
Costel, Esther Elizabeth (Princeton), Lexington, Kentucky  
Crain, Barbara J. (California-Irvine), Long Beach, California  
Dawkins, Jennings Ray, Jr. (North Carolina State), Fayetteville, North Carolina  
Dealy, Darilyn Hedden (Tufts), Fairfield, Connecticut  
Douglas, James Marion, Jr. (Duke), Spartanburg, South Carolina  
Drucker, Robert Patrick (Harvard), Charlottesville, Virginia  
Edgar, John Ralph (Massachusetts Inst. of Tech.), Atlanta, Georgia  
Eisenson, Howard J. (Union Coll. of Schenectady), White Plains, New York  
Eliasson, Arn Hendrick (Davidson), Safety Harbor, Florida  
Fath, John Joseph (Villanova), Hickory Corners, Michigan  
Fitz, John Gregory (North Carolina at Chapel Hill), Hickory, North Carolina  
Floyd, Richard Dudley (Duke), Lexington, Kentucky  
Foster, Jerry Michael (North Carolina State), Newton, North Carolina  
Gibbs, Verna Catholine (Harvard), Jersey City, New Jersey  
Gordon, Jo Carol (Stanford), Los Gatos, California  
Guyton, Jean Margaret (Radcliffe), Jackson, Mississippi  
Hamm, Barbara Lois (Mt. Holyoke), Elberton, Georgia  
Harlan, John Woody (Harvard), Sylvania, Ohio  
Harward, Timothy Richard Stephen (Duke), Durham, North Carolina  
Hathorn, James Walker (Maryland), Silver Spring, Maryland  
Heald, Peter Winey (Dartmouth), Elkins, New Hampshire  
Higham, Margaret (Michigan), Baltimore, Maryland  
Humphrey, Gary Bertrand (Harvard), Oklahoma City, Oklahoma  
Hunt, Christopher Miller (Pennsylvania), Pittsburgh, Pennsylvania  
Jonas, Wayne Babcock (Davidson), Potomac, Maryland  
Jones, David Craven (North Carolina at Chapel Hill), Mebane, North Carolina  
Kahn, Edgar Michael (St. Andrews Presbyterian), Franklin, North Carolina  
Kaufman, Lisa (Duke), Villanova, Pennsylvania  
Krause, Robert Allen (Pennsylvania State), Pittsburgh, Pennsylvania  
Limberakis, Anthony John (Pennsylvania), Jenkintown, Pennsylvania  
Lister, Philip Nathaniel (Hampshire), Brevard, North Carolina  
Long, Karen Louise (Denison), Snyder, New York  
Marrow, Henry Gregory (Davidson), Tarrboro, North Carolina  
Martell, Jon Vincent (North Carolina at Chapel Hill), Durham, North Carolina  
McAlister, David Shane (Washington & Lee), Huntsville, Alabama  
McCachren, Samuel Spence, Jr. (North Carolina at Chapel Hill), Concord, North Carolina  
McCoy, Steven Robert (Duke), Westport, Connecticut  
Meyers, Marguerite Evelyn (Pennsylvania State), Moorestown, New Jersey  
Mold, David Edward (Michigan), Durham, North Carolina  
Moll, Maria Elizabeth (Randolph-Macon), Hampton, Virginia  
Nordstrom, James Eric (Harvey Mudd), Farmington, New Mexico  
Orland, Richard Alan (Princeton), Cherry Hill, New Jersey  
Ose, Dennis E. (Purdue), Indianapolis, Indiana  
Paterson, Robert Worcester (Duke), Solon, Ohio  
Placilla, William John (Rensselaer Polytechnic Inst.), Somerville, New Jersey  
Post, Nancy (Michigan), New York, New York



Preston, Marion M. (Yale), Lake Forest, Illinois  
 Prince, Marilyn Ann (Duke), Richmond, Virginia  
 Raine, Wilfred Leroy (Williams), Mobile, Alabama  
 Ramey, Thomas Lee (Virginia), Charlottesville, Virginia  
 Reintgen, Douglas Scott (Duke), Latrobe, Pennsylvania  
 Rivers, Reuben Norman (Duke), Durham, North Carolina  
 Ross-Duggan, John Ward (California-Irvine), Newport Beach, California  
 Ruck, David Carl (U.S. Military Academy), Kennebunk, Maine  
 Ruth, Wayne Kimberly (North Carolina State), Raleigh, North Carolina  
 Sadler, Jasper Evan, III (Princeton), Huntington, West Virginia  
 Schirmer, Bruce David (Princeton), Closter, New Jersey  
 Schlossman, David Michael (Columbia), Kenmore, New York  
 Sealy, David Probst (Claremont Men's College), Hillsborough, California  
 Sharp, Gregory H. (California Inst. of Tech.), Squantum, Massachusetts  
 Silimperi, Diana Regina (Duke), Bethlehem, Pennsylvania  
 Skell Cerf, Victoria Anne (Mills), State College, Pennsylvania  
 Slate, Richard Kendrick (North Carolina at Chapel Hill), Clemmons, North Carolina  
 Smith, Eric Peter (Dartmouth), Durham, North Carolina  
 Spanarkel, Marybeth (Marymount), Jersey City, New Jersey  
 Spivey, Beverly Jean (Cornell), Brooklyn, New York  
 Stahl, Christiane Ellen (Bennington), Durham, North Carolina  
 Stanton, Edward Spires (Duke), Plymouth, North Carolina  
 Stein, Robert B. (Indiana), Kokomo, Indiana  
 Stockton, Anne (North Carolina at Chapel Hill), Johnstown, Pennsylvania  
 Strauss, Michael Joel (Harvard), Silver Spring, Maryland  
 Tatum, Robert King (Duke), Harrington Park, New Jersey  
 Teasley, David G. (Case-Western Reserve), Milwaukee, Wisconsin  
 Thalmann, Ellen Anne (Duke), Suffern, New York  
 Trofatter, Kenneth Frank, Jr. (Duke), Bound Brook, New Jersey  
 Varney, Robert Ralph (Colgate), Darien, Connecticut  
 Vereen, Ronald Lloyd (North Carolina at Chapel Hill), Durham, North Carolina  
 Vick, Giles Wesley, III (Duke), Monroe, North Carolina  
 Walsh, Margaret Ann (Smith), Poughkeepsie, New York  
 Ward, Bradley Lee (Georgia), Taylorsville, Georgia  
 Ward, William Goode (North Carolina at Chapel Hill), Lincolnton, North Carolina  
 Wessels, Michael Robert (Oberlin), Grand Junction, Colorado  
 Weyrauch, Terri Ann (Pomona), Silver Spring, Maryland  
 Wilhelmsen, Bruce Douglas (Southern Methodist), New Orleans, Louisiana  
 Williams, Kenneth Dean (Davidson), Liberty, South Carolina  
 Wissow, Lawrence Sagin (Amherst), North Plainfield, New Jersey  
 Worsley, Stephen Cole (North Carolina at Chapel Hill), Greenville, North Carolina  
 Wright, Anne Harley (Wellesley), Philadelphia, Pennsylvania  
 York, Michael Francis (Maryland), Bethesda, Maryland  
 Young, Dale Christopher (Davidson), Orlando, Florida  
 Zern, Ruthann Theresa (Douglass), Wyckoff, New Jersey

## Class of 1980

Abbey, Linda Jean (Muhlenberg), Somerville, New Jersey  
 Abernathy, David Smith (Earlham), Little Rock, Arkansas  
 Abernethy, John Lloyd (Duke), Charlotte, North Carolina  
 Adams, Marsha Gale (Duke), Malvern, Pennsylvania  
 Adler, Stuart Ralph (Harvard), Statesville, North Carolina  
 Aguilar, Manuel (Duke), San Jose, Costa Rica  
 Alexander, Eben, III (North Carolina at Chapel Hill), Winston-Salem, North Carolina  
 Alexander, John E. (Davidson), Laurinburg, North Carolina  
 Anders, Elizabeth Jane (Emory), Riverdale, Georgia  
 Anderson, Scott Joseph (California at San Diego), Long Beach, California  
 Andrews, William Cooke, Jr. (Duke), Norfolk, Virginia  
 Attarian, David (Princeton), Albany, New York  
 Basuk, Barbara Jo (Brown), Gloversville, New York  
 Beasley, Charles Ronald (Pembroke), Maxton, North Carolina  
 Bell, William Harrison (Tulane), New Bern, North Carolina  
 Bennett, James Kent (Clark), Elberton, Georgia  
 Berrebi, Gabriel (Brooklyn College), Brooklyn, New York  
 Bird, Janice Lynn (Duke), New Carrollton, Maryland

Blazey, Dale Lawrence (Colgate), Pittsford, New York  
 Bodner, Sara M. (Wellesley), Coral Gables, Florida  
 Boekelheide, Kim (Harvard), Chapel Hill, North Carolina  
 Bounous, Edwin P., Jr. (Duke), Morganton, North Carolina  
 Brasington, Richard D., Jr. (Harvard), Asheville, North Carolina  
 Broom, James Howell (University of Alabama), Hartselle, Alabama  
 Brothers, Leslie Ann (Harvard), Concord, Massachusetts  
 Browning, David J. (Harvard), Huntsville, Alabama  
 Buckner, John Kern (North Carolina at Chapel Hill), Chapel Hill, North Carolina  
 Bunn, William B., III (Duke), Raleigh, North Carolina  
 Casey, Douglas E. (California at Santa Barbara), Garden Grove, California  
 Chambers, Christopher V. (Princeton), Wilmington, Delaware  
 Chiles, Caroline (Massachusetts Inst. of Tech.), High Point, North Carolina  
 Chiu, Linda I-Yu (Princeton), Baltimore, Maryland  
 Chu, Alfred Alan S.P. (McGill), Hong Kong, Hong Kong  
 Clark, Barbara Anne (Yale), Dearborn, Michigan  
 Clarke, William R. (Duke), Cincinnati, Ohio  
 Coffey, C. Edward (Wofford), Little River, South Carolina  
 Cote, Peter Christopher (State Univ. of New York), Syracuse, New York  
 Crimm, Allan Lawrence (Yale), Atlanta, Georgia  
 Damiano, Ralph James (Dartmouth), Vista, New York  
 Denning, Stephen Mitchell (Duke), Rutherfordton, North Carolina  
 DeWitt, Eleanor Hinds (Wooster), New Wilmington, Pennsylvania  
 Doyle, William Jay, III (Duke), Cincinnati, Ohio  
 Dresser, Michael (Duke), Davidson, North Carolina  
 Dunn, Mitchell Bennett (Duke), West Hartford, Connecticut  
 duRivage, Stephen Kent (Virginia), Huntington, New York  
 Dykes, James Russell (Duke), Wadesboro, North Carolina  
 Earley, Mary Frances (Duke), Graden City, New York  
 Ebihara, Lisa (Northwestern), Wilmette, Illinois  
 Eden, Robert Scott (Duke), Atlanta, Georgia  
 Engelhard, Herbert Harter, III (Duke), Northbrook, Illinois  
 Ervin, Warren Dixon (Stanford), Redmond, Washington  
 Fitch, Nancy E. (Brown), Johnson City, Tennessee  
 Foster, Paul A. (Michigan), Dearborn, Michigan  
 Frazer, Joe W., III (Duke), Greensboro, North Carolina  
 Froome, Lynn C. (Bennington), Penfield, New York  
 Geier, Gail Herman (Smith), White Plains, New York  
 Giguere, Jeffrey Kent (Duke), Wilmington, Delaware  
 Gillogly, Scott Dale (U.S. Military Academy), East Aurora, New York  
 Gore, Thomas Bowden (Duke), La Grange, Georgia  
 Gores, Paul Farrell (Macalester), Rochester, Minnesota  
 Gospe, Sidney M., Jr. (Stanford), San Francisco, California  
 Gottlieb, Ronald Howard (Pennsylvania), Englewood, New Jersey  
 Grant, James William (North Carolina State), Rocky Mount, North Carolina  
 Greenberg, Raymond Seth (North Carolina at Chapel Hill), Chapel Hill, North Carolina  
 Hainline, Bryan E. (Georgia Inst. of Tech.), Atlanta, Georgia  
 Hall, Barbara Jean (Duke), Houston, Texas  
 Hall, Sherry Lene (Duke), Snow Hill, North Carolina  
 Harris, Stuart I. (Duke), Miami, Florida  
 Hepler, Kevin Michael (Princeton), Myerstown, Pennsylvania  
 Honeycutt, Pamela J. (Mississippi), Jackson, Tennessee  
 Howell, David Noble (Duke), Greenville, North Carolina  
 Hughes, Claude L., Jr. (East Carolina), New Bern, North Carolina  
 Imber, Michael James (Northwestern), Chicago, Illinois  
 Janick, Peter A. (Cornell), W. Lafayette, Indiana  
 Johnston, Michael Francis (Georgia), Athens, Georgia  
 King, Richard Glenn (North Carolina at Chapel Hill), Gastonia, North Carolina  
 Kistler, Kent Howard (North Carolina State), Raleigh, North Carolina  
 Klein, Alan S. (Brandeis), Brooklyn, New York  
 Krause, Cynthia Lisa (Pennsylvania), Baltimore, Maryland  
 Lacks, Susan (Queens), Flushing, New York  
 Larrick, James William (Colorado), Englewood, Colorado  
 Lee, James Edward (Duke), Oak Park, Illinois  
 Lekwuwa, Okafor (Duke), Nigeria, West Africa  
 Lemon, Norma Celeste (Harvard-Radcliffe), Cincinnati, Ohio

Li, James T. (Princeton), Jamaica, New York  
 Lightner, Virginia (Massachusetts Inst. of Tech.), Santurce, Puerto Rico  
 Ludlow, David Emil (Brigham Young), Spanish Fork, Utah  
 McKay, Lillian L. (Swarthmore), Charlotte, North Carolina  
 Mabry, Mack Harrison (Davidson), Norwood, North Carolina  
 Mabry, Michael Edwin (Duke), Lexington, Kentucky  
 Maher, Jacquelyn Jo (Duke), St. Louis, Missouri  
 Mappin, Francis Gregory (Duke), St. Simons Island, Georgia  
 Markert, Mary L. (Smith), Ogdensburg, New York  
 Mason, Daniel Evan (Colgate), Beechhurst, New York  
 Matthews, Dale Alan (Princeton), Hanover, New Hampshire  
 Mazoujian, Gwen (Skidmore), Durham, North Carolina  
 Michal, Richard Glenn (North Carolina at Chapel Hill), Charlotte, North Carolina  
 Miller, Edward Douglas (Colgate), Columbus, Ohio  
 Morrison, Gregory Earle (Princeton), Westfield, New Jersey  
 Murdock, Charles Bruce (South Carolina), Belton, South Carolina  
 Neuss, Michael Norbert (Michigan), Indianapolis, Indiana  
 Nunn, Chalmers Morton, Jr. (Duke), Clarksville, Virginia  
 Parker, Margaret Elizabeth (Duke), Sarasota, Florida  
 Peacock, Mary Louise (North Carolina at Greensboro), Greensboro, North Carolina  
 Peterson, Caroline L. (Marquette), Bloomington, Minnesota  
 Plotka, Marshall Brian (Duke), Mountain Brook, Alabama  
 Post, Stephen Edward (North Carolina at Chapel Hill), Greenville, North Carolina  
 Puleo, Joel (Duke), Elam, New York  
 Rabkin, Michael Scott (Massachusetts Inst. of Tech.), Marblehead, Massachusetts  
 Rocco, Michael Benjamin (Georgetown), West Orange, New Jersey  
 Roloson, Gary James (California-San Diego), San Gabriel, California  
 Rosenberg, Dana Wolf (Brown), Scarsdale, New York  
 Rotberg, Michael Scott (Haverford), West Orange, New Jersey  
 Russell, Janet Young (Duke), Mickleton, New Jersey  
 Rutledge, John H. (Southwestern-Memphis), Humboldt, Tennessee  
 Ryan, Stephen Gregory (Georgetown), Kensington, Maryland  
 Sahmel, Reinhardt O. (Princeton), Staten Island, New York  
 Salafia, Carolyn Margaret (Dartmouth), Middletown, Connecticut  
 Schmidt, Emmett V. (Harvard), Elmsford, New York  
 Schreiner, Elizabeth J. (Rensselaer Polytechnic Inst.), Hinckley, Ohio  
 Schwartz, Gregory Glenn (Brown), Jackson Heights, New York  
 Sechrest, Randal Craig (North Carolina at Chapel Hill), Jamestown, North Carolina  
 Silverman, Mitchell S. (Harvard), Massapequa, New York  
 Sims, Peter J. (Amherst), New Rochelle, New York  
 Small, James Michael (Colorado), Englewood, Colorado  
 Smith, Stephanie E. (South Carolina), Columbia, South Carolina  
 Sprung, Douglas Jay (New York University), New York, New York  
 Stringfield, John William (North Carolina at Chapel Hill), Hazelwood, North Carolina  
 Teigland, Chris Michael (Duke), Miami, Florida  
 Thompson, Katherine Ann (Duke), Lexington, Kentucky  
 Tibbetts, Kim Richard (Stanford), Granada Hills, California  
 Tipermas, Alan (Massachusetts Inst. of Tech.), Fair Lawn, New Jersey  
 Treiman, Alan Richard (Franklin & Marshall), Merrick, New York  
 Tumen, Jon Jay (Brandeis), Deal Park, New Jersey  
 Van Dalen, Robert Warren (Duke), Clifton, New Jersey  
 Vogel, Hans P. (North Carolina at Chapel Hill), Durham, North Carolina  
 Ward, Richard Mayhew (Duke), Charlotte, North Carolina  
 Washburn, Ronald Glenn (Brown), Lake Bluff, Illinois  
 Weissig, Mark D. (California at Davis), Sacramento, California  
 Whalen, Giles Francis (Harvard), Shrewsbury, New Jersey  
 Whatley, Ralph Emerson (Duke), Raleigh, North Carolina  
 Wheeler, David M. (Duke), Baltimore, Maryland  
 White, Johnny Lee, Jr. (Harvard), Virginia Beach, Virginia  
 White, Thomas Rhyne (Duke), Cherryville, North Carolina  
 Wilkins, Isabelle Ann (Barnard), Pittsburgh, Pennsylvania  
 Williams, Christopher D. (Florida), Venice, Florida  
 Willis, Rebecca Margaret (Yale), Perry, Iowa  
 Wilson, Bryan Hadley (Davidson), Boone, North Carolina  
 Wood, Catherine L. (Macalester), Rochester, Minnesota  
 Wool, Steven Alan (Washington), Waukegan, Illinois

Yarbrough, Emily Elliot (Duke), Durham, North Carolina  
Yen, Tien-Sze (Stanford), Palo Alto, California  
Ziegler, Robert Eliot (Colorado), College Park, Georgia

## Class of 1981

Albert, David E. (Harvard), McAlester, Oklahoma  
Albrecht, Renata (Yale), Rockville, Maryland  
Allen, David B. (Stanford), LaGrange, Illinois  
Allen, Pamela L. (DePauw), Charlotte, North Carolina  
Anderson, Roger F. (Duke), Durham, North Carolina  
Angle, Marcia (Harvard), Omaha, Nebraska  
Arens, Gwendolyn M. (Duke), Silver Spring, Maryland  
Ashland, Gloria E. (Yale), North East, Maryland  
Barnes, R. Stephen (Auburn), Greenville, North Carolina  
Birmingham, L. Faith (North Carolina State), Durham, North Carolina  
Blakey, David N. (North Carolina State), Greensboro, North Carolina  
Bloch, Craig A. (Tufts), Allenton, Pennsylvania  
Bowe, Pamela L. (Wellesley), Cincinnati, Ohio  
Brasher, Bruce (Duke), Basking Ridge, New Jersey  
Brazeal, Febe I. (Birmingham-Southern), Fairhope, Alabama  
Bressler, Peter (Hamilton), Durham, North Carolina  
Broadhead, Walter (Davidson), Charleston, West Virginia  
Bronec, Peter R. (Stanford), Racine, Wisconsin  
Buescher, Philip C. (Duke), Ft. Washington, Pennsylvania  
Calvert, Richard J. (Duke), Worthington, Ohio  
Campbell, Robert F. (Northwestern), Oak Ridge, Tennessee  
Christenbury, Jonathan D. (Oral Roberts), Charlotte, North Carolina  
Clapp, Debra H. (Virginia), Bluefield, West Virginia  
Clark, Timothy J. (Colby), Winston-Salem, North Carolina  
Crawford, James M. (Dartmouth), Fairfield, Connecticut  
Davidson, Diane M. (Yale), Monroe, New York  
Davis, Clinton B. (Duke), Orlando, Florida  
Davis, Jefferson U. (Wake Forest), Winston-Salem, North Carolina  
Davis, John S. (University of Akron), Akron, Ohio  
Dein, John R. (Duke), San Antonio, Texas  
DeLuca, Peter A. (St. Peters), Jersey City, New Jersey  
Dunlap, Nancy E. (Wellesley), Gainesville, Georgia  
Dunn, Laurie L. (Davidson), Laurinburg, North Carolina  
Ferguson, Berrylin (Princeton), Jacksonville, Florida  
Floyd, Walter L., Jr. (Vanderbilt), Durham, North Carolina  
Fudman, Edward J. (Duke), Baltimore, Maryland  
Germino, Joseph (Holy Cross), Palo Park, Illinois  
Gillman, Matthew W. (Harvard), Chevy Chase, Maryland  
Haas, Mark (Duke), Floral Park, New York  
Harlan, David M. (Michigan), Sylvania, Ohio  
Hudson, Gregory L. (Brown), Wellesley, Massachusetts  
Johnson, Michael E. (Brigham Young), Mesa, Arizona  
\* Jones, Claudia K. (Duke), Durham, North Carolina  
Jorgensen, E. Verena (Stanford), Garden City, New York  
Kappa, Jeffrey R. (Duke), Kingsport, Tennessee  
Keener, Stephen R. (Davidson), Swannanoa, North Carolina  
Koo, Edward H. M. (Amherst), Jardine's Lookout, Hong Kong  
Kreit, John W., Jr. (Duke), Hebron, Maryland  
Kunin, Jean E. (Wisconsin), Milwaukee, Wisconsin  
Lang, Joanne (Wisconsin), Milwaukee, Wisconsin  
Lansing, Ann M. (Duke), Durham, North Carolina  
\* Lazarus, Kenneth J. (Massachusetts Inst. of Tech.), North Miami Beach, Florida  
Lee, Jesse T., III (Davidson), Wilmington, North Carolina  
Leone, Joann C. (Williams College), Pelham, New York  
Lesesne, Carroll B. (Princeton), Grosse Pointe Farms, Michigan  
Ling, Mark (Harvard), Merion, Pennsylvania  
Lorensen, Gilda J. (Stanford), Orinda, California  
Lourie, Gerald Louis (Brown), Syracuse, New York  
Lucas, John F. (Mississippi), Greenwood, Mississippi

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\*Leave of absence.



McKnight, Martha A. (North Carolina at Chapel Hill), Charlotte, North Carolina  
 Mencio, Gregory A. (Duke), Naugatuck, Connecticut  
 Michel, Thomas M. (Harvard), Cranston, Rhode Island  
 Middleton, William D. (Duke), Muncie, Indiana  
 Milbauer, David L. (State University of Buffalo), Massapequa, New York  
 Milliken, Nancy (Harvard), Spartanburg, South Carolina  
 Montgomery, Demetria (Clark), Ashville, Alabama  
 Moreadith, Randall W. (North Carolina State), Leland, North Carolina  
 Morris, Hugh B. (Duke), Aiken, South Carolina  
 Morris, James J. (Dartmouth), Durham, North Carolina  
 Morrison, John G. (Erskine), Due West, South Carolina  
 Murdaugh, Elizabeth (Brown), Columbia, South Carolina  
 Ney, Kathryn A. (Pittsburgh), Pittsburgh, Pennsylvania  
 O'Neill, James F. (Colorado), St. Petersburg, Florida  
 Parkerson, George R. (Duke), Durham, North Carolina  
 Peters, Bryan M. (North Carolina at Chapel Hill), Elizabeth City, North Carolina  
 Piscitelli, Joanne T. (Occidental), Arcadia, California  
 Porter, Jan L. (Connecticut), Memphis, Tennessee  
 Poyet, Claire M. (Duke), Coral Gables, Florida  
 Pryor, William W. (Furman), Simpsonville, South Carolina  
 Putnam, William S. (Duke), Roanoke, Virginia  
 Ramage, James E., Jr. (Stanford), Columbia, South Carolina  
 Rankin, Richard B., III (Davidson), Concord, North Carolina  
 Reiman, Eric M. (Duke), Port Washington, New York  
 Riley, Hosie K. (Stanford), Oakland, California  
 Russell, Asela C. (Yale), Washington, D.C.  
 Schiff, Steven J. (Massachusetts Inst. of Tech.), Liberty, New York  
 Schwartz, Steve W. (Duke), Newport News, Virginia  
 Segars, James H. (Duke), Lenoir, North Carolina  
 Severance, Harry Wells, Jr. (East Carolina), Wilson, North Carolina  
 Sewell, Kathryn Lea (Dartmouth), Middleburgh, New York  
 Sholar, Pamela W. (Agnes Scott), Mooresville, North Carolina  
 Shugerman, Earle, Jr. (Hampshire), Birmingham, Alabama  
 Siedler, Daniel E. (Dartmouth), West Falls, New York  
 Simel, David L. (North Carolina at Chapel Hill), Greensboro, North Carolina  
 Snyder, Quay C., Jr. (U.S. Air Force Academy), Carlisle Barracks, Pennsylvania  
 Sourbeer, Jeffrey J. (Duke), Largo, Florida  
 Spector, Barbara (Cornell), New York, New York  
 Spence, Frank J., Jr. (Florida Tech. Univ.), Orlando, Florida  
 Stanley, Thomas E., III (Duke), Savannah, Georgia  
 Stein, Roy M. (Massachusetts), Montgomery, Alabama  
 Stephens, Wayland C. (Davidson), Maitland, Florida  
 Stowers, Stewart F. (Duke), Signal Mountain, Tennessee  
 Thielman, Samuel B. (Wheaton), Montreat, North Carolina  
 Thienemann, Margo L. (Duke), Rockford, Illinois  
 Trader, David W. (Stanford), Greensboro, North Carolina  
 Tyor, William R. (Emory), Durham, North Carolina  
 Van den Berg, Egerton, Jr. (Washington & Lee), Winter Park, Florida  
 Walsh, James P. (Mississippi State), Montgomery, Alabama  
 Watkis, Patricia A. (City College of New York), Brooklyn, New York  
 Watson, William B. (Duke), Glen Ridge, New Jersey  
 Wilcosky, Bernard R., Jr. (Methodist College), Fayetteville, North Carolina  
 Wooten, Stephen L. (Duke), Greenville, North Carolina

## Class of 1982

Ackerman, Richard John (Furman), Sumter, South Carolina  
 Anderson, Donna Grey (William & Mary), Lumberton, North Carolina  
 Anthony, Douglas Carter (Washington), Hermitage, Missouri  
 Austin, Michael (Emory), Chamblee, Georgia  
 Barden, Graham Arthur, III (Duke), New Bern, North Carolina  
 Bell, Edwin Lillington (Duke), New Bern, North Carolina  
 Bertics, Gregory M. (Duke), East Brunswick, New Jersey  
 Bishop, Timothy Scot (Rice), Las Cruces, New Mexico  
 Blatchford, James W., III (Duke), Newtown Square, Pennsylvania  
 Bledsoe, Robert Eugene, Jr. (Mississippi), Greenville, Mississippi

Bounous, Christine Graham (Duke), Durham, North Carolina  
 Bowring, Margaret Ann (Wellesley), Durham, New Hampshire  
 Browder, Timothy Marshall (Wake Forest), Charlotte, North Carolina  
 Browne, Paul C. (North Carolina at Chapel Hill), Winston-Salem, North Carolina  
 Bures, Diana Marie (Duke), St. Petersburg, Florida  
 Burge, William R. (Paine), Farmville, North Carolina  
 Caffrey, William Daniel, Jr. (Duke), Greensboro, North Carolina  
 Calcagno, David (Tufts), Cos Cob, Connecticut  
 Califf, James Christopher (South Carolina), Columbia, South Carolina  
 Campbell, Cyd Patrice (Clark), St. Petersburg, Florida  
 Campbell, Elizabeth Estill (Duke), Chapel Hill, North Carolina  
 Cance, William George (Duke), Asheville, North Carolina  
 Carlson, Alan Neil (Duke), Newburgh, Indiana  
 Chantry, Caroline Jean (Iowa), Omaha, Nebraska  
 Christopher, Thomas David (Duke), Huntington, New York  
 Clardy, Elizabeth Anne (Brown), Arlington, Virginia  
 Cooper, Carnell (Yale), Dillon, South Carolina  
 Coppage, Donna Lynn (Brown), Madison, Connecticut  
 Cox, David Allan (Harvard), Louisville, Kentucky  
 Crump, Mark Anthony (Cornell), Riverhead, New York  
 Cunningham, Scott Lance (Massachusetts Inst. of Technology), Newburgh, New York  
 Dedwylder, Rosier Davis (Virginia), Hamilton, Georgia  
 Dent, Georgette (Duke), Raleigh, North Carolina  
 DiCostanzo, Damian Paul (Dartmouth), Canton, Massachusetts  
 Dodson, William Warnick, III (Emory), Atlanta, Georgia  
 Dove, Samuel Tyrone (Duke), Raleigh, North Carolina  
 Early, Terrence Stephen (Missouri), Edina, Missouri  
 Ellwood, Hilary Kate (North Carolina State), Raleigh, North Carolina  
 Emery, Sanford Emil (Dartmouth), Selkirk, New York  
 Ferren, Edwin Louis (Davidson), Haddonfield, New Jersey  
 Fram, Evan (Cornell), Aspen, Colorado  
 Frothingham, Richard (Massachusetts Inst. of Technology), Little Rock, Arkansas  
 Gagliano, Martha E. (Radcliffe), Belvedere, California  
 Gelinas, Julie Price (Duke), Woburn, Massachusetts  
 Gibson, James B. (California–Davis), San Francisco, California  
 Gilliam, Francis Roosevelt (Georgia), Lancaster, South Carolina  
 Glover, Michael Griffen (Duke), Wilson, North Carolina  
 Gonias, Steven Larry (SUNY–Stony Brook), Brooklyn, New York  
 Gore, Ira, Jr. (Harvard), Rochester, New York  
 Grace, Candis D. (South Carolina State College), Charleston, South Carolina  
 Griffith, Landis King (Duke), Greenville, South Carolina  
 Grote, Thomas Howard (North Carolina at Chapel Hill), Charlotte, North Carolina  
 Gruber, James Edmond (Dartmouth), Bedford, New York  
 Gutmann, Katherine B. (Wisconsin), Janesville, Wisconsin  
 Hackel, Andrea Joyce (Swarthmore), Durham, North Carolina  
 Halverson, James Ramsay (California–Los Angeles), Highland, California  
 Haug, Craig Eric (Duke), Normandy Beach, New Jersey  
 Haworth, Charles S. (Guilford), High Point, North Carolina  
 Herzog, William Raymond, Jr. (Duke), Ellicott City, Maryland  
 James, Susan Dara (Duke), Durham, North Carolina  
 Kernstine, Kemp Howard (Duke), Fayetteville, North Carolina  
 Kinney, Robert Bruce (Wheaton), Elgin, Illinois  
 Kirschner, Greg Kenneth (Northwestern), North East, Pennsylvania  
 Koehler, Mary Frances (Michigan–Ann Arbor), Northville, Michigan  
 Kondis, Deborah Jean (Cornell), Munhall, Pennsylvania  
 Kopitsky, Robert Gene (Emory), St. Louis, Missouri  
 Leigy, Lu Ann (Virginia), Lansdale, Pennsylvania  
 Levine, Steven Jan (California–San Diego), Northridge, California  
 Lewis, Kapauner Ramona (South Carolina), Columbia, South Carolina  
 Lingle, James D., III (North Carolina at Chapel Hill), Charlotte, North Carolina  
 Lourie, Gary (Duke), Syracuse, New York  
 Maier, George William (Loyola), Baltimore, Maryland  
 Mainwaring, Richard D. (Duke), Center Valley, Pennsylvania  
 Martin, Joseph Henry, Jr. (Howard), Durham, North Carolina  
 McCall, Grace Conley (North Carolina State), Marion, North Carolina  
 McCarley, Meda Elizabeth (Kansas), Dallas, Texas

McCrae, Keith Randall (Dartmouth), Cumberland Foreside, Maine  
 McVicar, John Patrick (Wesleyan), Broomfield, Colorado  
 Michael, Gina Lucette (Missouri-Columbia), St. Louis, Missouri  
 Miller, Timothy James (Dartmouth), Racine, Wisconsin  
 Mitchener, James Samuel, III (Davidson), Laurinburg, North Carolina  
 Montague, Katherine Anne (Randolph-Macon), Virginia Beach, Virginia  
 Morgello, Susan (Massachusetts Inst. of Technology), Bronx, New York  
 Murphy, Charles Edmond, Jr. (Loyola), Atlanta, Georgia  
 Nile, Peggy Leigh (Union), Oneonta, New York  
 Oligino, Lynette Diana (Connecticut), Danbury, Connecticut  
 Ormsby, Alice Marie (Stanford), Milwaukie, Oregon  
 Ornstein, Steven M. (Dartmouth), Wantagh, New York  
 Page, Susan Carol (Duke), Raleigh, North Carolina  
 Paull, Douglas Edward (Duke), Dayton, Ohio  
 Pin, Paul Gordon (Duke), College Park, Maryland  
 Pollack, Rosanne Denise (Yale), Dayton, Ohio  
 Ralston, Matthew Dean (Dartmouth), Clarksdale, New Jersey  
 Rowley, Richard F. (Harvard), Albany, New York  
 Russell, Byron Dale (Duke), Durham, North Carolina  
 Sasso, Robert Anthony (Seton Hall), Harrison, New Jersey  
 Saul, Jerome Philip (Duke), Atlanta, Georgia  
 Schultz, Leslie Anne (Duke), Brielle, New Jersey  
 Schwartz, Michael Alan (Duke), Charleston, West Virginia  
 Shekelle, Paul Gordon (Illinois), Oak Park, Illinois  
 Shelton, Raymond Alan (North Carolina at Chapel Hill), Burlington, North Carolina  
 Siegel, Carol Deborah (Massachusetts Inst. of Technology), Williamsburg, Virginia  
 Smith, Wilburn Jackson (North Carolina at Chapel Hill), Raleigh, North Carolina  
 Spitz, Susan Ina (Radcliffe), Plainview, New York  
 Stewart, Cathleen Marie (California-Los Angeles), Santa Monica, California  
 Stringer, Arthur Vernon (North Carolina State), Concord, North Carolina  
 Susskind, Mark Richard (Duke), Fairmont, West Virginia  
 Tarpey, Margaret Mary (California-Riverside), San Francisco, California  
 Tibbetts, Joyce A. (Florida), Jacksonville, Florida  
 Vogel, Patrick Michael (Duke), Durham, North Carolina  
 Walden, Lesa Denise (Dartmouth), South Orange, New Jersey  
 Warren, Jeffery Steven (Yale), Salisbury, North Carolina  
 Weir, Samuel Gamble, III (Davidson), Charlotte, North Carolina  
 White, Richard Donald (Hamilton), Burnt Hills, New York  
 Whitehurst, Robert (North Carolina State), New Bern, North Carolina  
 Williams, William Prescott (Swarthmore), Syracuse, New York  
 Woodruff, William Walter (North Carolina at Chapel Hill), Lexington, North Carolina  
 Worms, David Rolland (Stanford), Excelsior, Minnesota  
 Wu, Lawrence Reginald (Williams College), Rochester, New York  
 Zeitler, Philip Scott (Amherst), Malden, Massachusetts

## Class of 1978 with Internship Appointments

Alpert, Stephen Edward (Durham, North Carolina) Children's Hospital, Philadelphia, Pennsylvania—Pediatrics  
 Alyono, David (Jakarta, Indonesia) University of Minnesota Hospitals, Minneapolis, Minnesota—Surgery  
 Apple, Jerry Stewart (Wallace, North Carolina) Duke Medical Center, Durham, North Carolina—Radiology  
 Avent, James Monroe (Norristown, Pennsylvania) University of Utah Affiliated Hospitals, Salt Lake City, Utah—Surgery  
 Bandy, Lawrence Curtis (Orlando, Florida) Ohio State University Hospitals, Columbus, Ohio—Internal Medicine  
 Beardsley, Thomas Lewis (Ridgefield, Connecticut) Dartmouth Affiliated Hospitals, Dartmouth, New Hampshire—Internal Medicine  
 Bell, William Reed, Jr. (Pensacola, Florida) Duke Medical Center, Durham, North Carolina—Pathology  
 Bencze, Robert Francis (Cranbury, New Jersey) The Fairfax Hospital—VA, Falls Church, Virginia—Family Practice  
 Bible, Henry Harold, Jr. (St. Louis, Missouri) University of Colorado Affiliated Hospitals, Denver, Colorado—Psychiatry

Bobbitt, William Haywood, III, (Charlotte, North Carolina) University of Colorado Affiliated Hospitals, Denver, Colorado—Internal Medicine

Booth, Daniel Hughston (Hendersonville, North Carolina) University of Utah Affiliated Hospitals, Salt Lake City, Utah—Surgery

Bowman, Zebulon Lynn (Burlington, North Carolina) University of Texas Affiliated Hospitals, Houston, Texas—Internal Medicine

Brantley, Bert Alton, Jr., (Columbia, South Carolina) Duke Medical Center, Durham, North Carolina—Internal Medicine

Bredesen, Dale Eric (Fort Lauderdale, Florida) Duke Medical Center, Durham, North Carolina—Internal Medicine

Bressler, Garrett Schell (Durham, North Carolina) William Shands Hospital, Gainesville, Florida—Internal Medicine

Buesing, Mary Ann (Leavenworth, Kansas) Brook Army Medical Center, San Antonio, Texas—Internal Medicine

Buff, Samuel Joseph (Alexis, North Carolina) Duke Medical Center, Durham, North Carolina—Radiology

Bull, Jonca Camille (Spartanburg, South Carolina) George Washington University, Washington, D.C.—Internal Medicine

Butera, Philip Joseph (Brooklyn, New York) Wilford Hall Medical Center, San Antonio, Texas—Internal Medicine

Butler, Stephen Robert (Roseboro, North Carolina) Stanford University, Stanford, California—Pediatrics

Califf, Robert McKinnon (Columbia, South Carolina) University of California Hospitals, San Francisco, California—Internal Medicine

Carey, Benjamin Arthur (Kinston, North Carolina) Navy Regional Medical Center—Oakland, Oakland, California—Psychiatry

Cassano, William Frank (Chappaqua, New York) St. Louis Children's Hospital, St. Louis, Missouri—Pediatrics

Cheung, Joseph Yat-Sing (Ontario, Canada) Duke Medical Center, Durham, North Carolina—Internal Medicine

Cline, William Tucker (Waynesville, North Carolina) The New York Hospital, New York, New York—Surgery

Conner, Patrick Robert (Burlington, North Carolina) University of Alabama Medical Center, Birmingham, Alabama—Internal Medicine

Cooper, John Allen Dicks, Jr. (Arlington, Virginia) University of Washington Affiliated, Seattle, Washington—Internal Medicine

Cross, Phyllis DeCarlo (Arlington, Virginia) Medical Center Hospitals, Charleston, South Carolina—Family Practice

Culp, John Rockwell (Morresville, North Carolina) William Shands Hospital, Gainesville, Florida—Internal Medicine

Dunn, Thaddeus Leland (Savannah, Georgia) Vanderbilt University Affiliated, Nashville, Tennessee—Internal Medicine

Dydek, Margaret Thompson (Fort Worth, Texas) Duke Medical Center, Durham, North Carolina—Obstetrics and Gynecology

Edmundson, Marsha Overman (Wilson, North Carolina) Fayetteville—NC—AHEC, Fayetteville, North Carolina—Family Practice

Erickson, Douglas Joseph (Chattanooga, Tennessee) Vanderbilt University Affiliated, Nashville, Tennessee—Pathology

Ferguson, Elaine Regina (Highland Park, Michigan) University of Chicago Clinics, Chicago, Illinois—Pediatrics

Freiberger, Harley Flay (Gastonia, North Carolina) Medical Center Hospitals, Charleston, South Carolina—Internal Medicine

Geballe, Adam Philip (Woodside, California) University of Chicago Clinics, Chicago, Illinois—Internal Medicine

Gibson, William G.H. (Ithica, New York) Duke Medical Center, Durham, North Carolina—Pathology

Ginsburg, David (Union, New Jersey) Peter Bent Brigham Hospital, Boston, Massachusetts—Internal Medicine

Gnann, John Wyatt, Jr. (Savannah, Georgia) University of Alabama Medical Center, Birmingham, Alabama—Internal Medicine

Goldberg, Joel Steven (Linden, New Jersey) Michael Reese Hospital and Medical Center, Chicago, Illinois—Internal Medicine

Gorman, Michael Robert (Bay Village, Ohio) University of Texas SW Affiliated Hospitals, Dallas, Texas—Surgery

Graham, John Douglas, III (Indianapolis, Indiana) University of Michigan Affiliated, Ann Arbor, Michigan—Internal Medicine



Griffin, Eugene Wilson, III (Aurora, Ohio) Duke Medical Center, Durham, North Carolina—Family Practice

Groeneveld, Jodelle Sue (Owosso, Michigan) University Hospitals Madison, Madison, Wisconsin—Internal Medicine

Hainline, Sarah Frances Wilkinson (Wales, Wisconsin) Duke Medical Center, Durham, North Carolina—Obstetrics and Gynecology

Hamp, Melissa (Grand Rapids, Michigan) The Children's Hospital of Pittsburgh, Pittsburgh, Pennsylvania—Pediatrics

Hanson, Jeffrey Becker (Geneva, Illinois) University of Colorado Affiliated Hospitals, Denver, Colorado—Pediatrics

Harden, Elizabeth Ann (Manning, South Carolina) University of Texas SW Affiliated Hospitals, Dallas, Texas—Internal Medicine

Harper, Wayne Lee (Knightdale, North Carolina) North Carolina Baptist Hospital, Winston-Salem, North Carolina—Internal Medicine

Hassett, Margaret Alycia (Wyomissing, Pennsylvania) Grady Memorial, Atlanta, Georgia—Internal Medicine

Hayes, Lynn Renee (Seattle, Washington) Presbyterian—St. Luke's, Chicago, Illinois—Obstetrics and Gynecology

Henderson, Joan Sanford (Fresno, California) Massachusetts General, Boston, Massachusetts—Dermatology

Henderson, Melvin Lee (Fayetteville, North Carolina) East Carolina University, Greenville, North Carolina—Obstetrics and Gynecology

Hodge, Gameel Byron, Jr. (Spartanburg, South Carolina) Duke Medical Center, Durham, North Carolina—Surgery

Hoffman, Robert Miles (Hillsdale, New Jersey) University of Pittsburgh Health Center, Pittsburgh, Pennsylvania—Internal Medicine

Isley, Joseph Plonk (Burlington, North Carolina) Harrisburgh Hospital, Harrisburgh, Pennsylvania—Internal Medicine

Jackson, Marianne (Concord, Massachusetts) School of Public Health, Chapel Hill, North Carolina

Johnson, Robert Bruce (Mississauga, Ontario, Canada) North Carolina Memorial, Chapel Hill, North Carolina—Internal Medicine

Johnson, Stephen Morgan (West End, North Carolina) University of Alabama Medical Center, Birmingham, Alabama—Internal Medicine

Johnston, Jeffrey Monroe (Charlotte, North Carolina) Vanderbilt University Affiliated, Nashville, Tennessee—Internal Medicine

Joiner, Clinton Hubert (Atlanta, Georgia) Duke Medical Center, Durham, North Carolina—Pediatrics

Kelley, Susan Lisa (Mahopac, New York) University of Colorado Affiliated Hospitals, Denver, Colorado—Internal Medicine

Lambeth, John David (El Paso, Texas) Duke Medical Center, Durham, North Carolina—Pathology

Lindsay, Peggy Susan (Washington, Georgia) Johns Hopkins Medical Center, Baltimore, Maryland—Ophthalmology

Lipton, Howard Alan (Durham, North Carolina) Beth Israel Hospital, Boston, Massachusetts—Surgery

Lutin, Charles David (Nashville, Tennessee) School of Public Health, Chapel Hill, North Carolina

Mains, Charles William (Atlanta, Georgia) University of Colorado Affiliated Hospitals, Denver, Colorado—Surgery

McClees, Eric Carr (Durham, North Carolina) Duke Medical Center, Durham, North Carolina—Radiology

McIntosh, Donald Munro, II (Marion, North Carolina) Vanderbilt University Affiliated, Nashville, Tennessee—Internal Medicine

Morris, David Clarence (Raleigh, North Carolina) Columbia Richland, Columbia, South Carolina—Family Practice

Myers-Budge, Beverly Jane (Winston-Salem, North Carolina) Duke Medical Center, Durham, North Carolina—Pathology

Myers, John Lewis (Pittsburgh, Pennsylvania) Maine Medical Center, Portland, Maine—Internal Medicine

Newman, Kurt Douglas (Raleigh, North Carolina) Peter Bent Brigham Hospital, Boston, Massachusetts—Surgery

Newman, William Neal (Clinton, North Carolina) Duke Medical Center, Durham, North Carolina—Internal Medicine

Nielsen, Anton Peter (Venice, Florida) Duke Medical Center, Durham, North Carolina—Internal Medicine

Nord, Claire Cooper (Athens, Georgia) North Carolina Memorial, Chapel Hill, North Carolina—Psychiatry

Novick, Thomas Leonard (Shawnee Mission, Kansas) Duke Medical Center, Durham, North Carolina—Surgery

O'Brien, Lauren Irene (Swarthmore, Pennsylvania) New England Deaconess, Boston, Massachusetts—Pathology

Peters-Golden, Marc Lee (Pannsauken, New Jersey) New England Medical Center, Boston, Massachusetts—Internal Medicine

Plummer, Charles Wayne (Durham, North Carolina) Duke Medical Center, Durham, North Carolina—Anesthesiology

Pozner, Linda Hough (Kershaw, South Carolina) Los Angeles County Harbor General, Torrance, California—Pediatrics

Rickard, Randall Craig (Spartanburg, South Carolina) Medical Center Hospitals, Charleston, South Carolina—Family Practice

Roark, Steven Forest (Wallingford, Pennsylvania) Duke Medical Center, Durham, North Carolina—Internal Medicine

Robb-Nicholson, Linda Celeste (Albuquerque, New Mexico) Peter Bent Brigham Hospital, Boston, Massachusetts—Internal Medicine

Roberts, Alfred Mack (Durham, North Carolina) Eastern Virginia Graduate Medical School, Norfolk, Virginia—Obstetrics and Gynecology

Ross, John W. (Decatur, Georgia) University of Pittsburgh Health Center, Pittsburgh, Pennsylvania—Internal Medicine

Runge, Pamela Margaret (Austin, Texas) University of Virginia Hospital, Charlottesville, Virginia—Pediatrics

Rutherford, George Williams, III (San Diego, California) University Hospital UC Medical Center SD, San Diego, California—Pediatrics

Savona, Steven Robert (New York, New York) NYU Bellevue Hospital, New York, New York—Internal Medicine

Sedwick, Lyn Alice (Maitland, Florida) U. San Antonio Teaching Hospitals, San Antonio, Texas—Internal Medicine

Sexton, Carlton Clark (Stevenson, Maryland) Yale–New Haven Medical Center, New Haven, Connecticut—Radiology

Shelburne, Thomas M. (Raleigh, North Carolina) Duke Medical Center, Durham, North Carolina—Family Practice

Shepard, Robert Charles (West Hempstead, New York) Sidney Farber Cancer Institute, Boston, Massachusetts—Oncology Research

Sherman, Douglas Paul (Winter Park, Florida) Tallahassee Memorial Hospital, Tallahassee, Florida—Family Practice

Shimm, David Stuart (Durham, North Carolina) Duke Medical Center, Durham, North Carolina—Internal Medicine

Shires, George Thomas, II (New York, New York) Grady Memorial Hospital, Atlanta, Georgia—Surgery

Simmons, Roberdeau Dunn (Alloway, New Jersey) University of Miami Affiliated Hospitals, Miami, Florida—Internal Medicine

Smiley, Margaret Lynn (Goodland, Kansas) Duke Medical Center, Durham, North Carolina—Internal Medicine

Steele, John Carson Hay, Jr. (North Augusta, South Carolina) William Shands Hospital, Gainesville, Florida—Pathology

Stern, Matthew Bruce (Newton, Massachusetts) Hospitals of University of Pennsylvania, Pittsburgh, Pennsylvania—Neurology

Stockbridge, Norman Landers (Durham, North Carolina) Duke University Graduate School, Durham, North Carolina—Department of Physiology

Suslavich, Catherine Helene Toye (Rhinebeck, New York) Duke Medical Center, Durham, North Carolina—Psychiatry

Suslavich, Frank John, Jr. (Darien Connecticut) Duke Medical Center, Durham, North Carolina—Radiology

Swingle, Hanes McPherson (Johnson City, Tennessee) Massachusetts General Hospital, Boston, Massachusetts—Pediatrics

Taylor, Terry (Santa Cruz, California) Georgetown University, Washington, D.C.—Internal Medicine

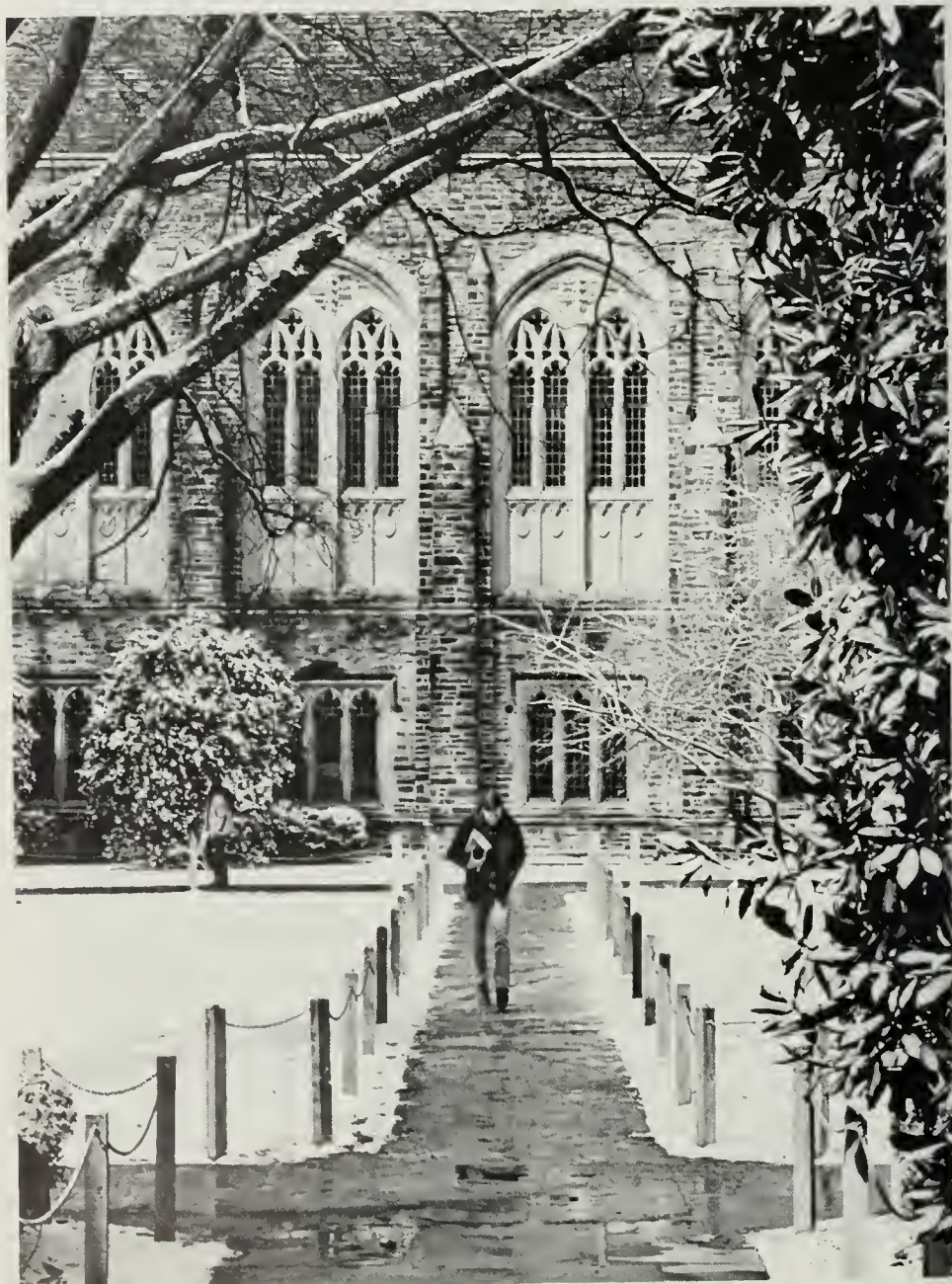
Tiller, Wendell Howard, Jr. (Spartanburg, South Carolina) Duke Medical Center, Durham, North Carolina—Orthopaedic Surgery

Tyson, George Stackley, Jr. (Florence, South Carolina) Duke Medical Center, Durham, North Carolina—Surgery

Vogel, Joseph Vincent (Durham, North Carolina) The New York Hospital, New York, New York—Pathology

Walker, Price, Jr. (Columbia, Georgia) University of Alabama Medical Center, Birmingham, Alabama—Internal Medicine

Wank, Stephen Arnold (Great Neck, New York) Johns Hopkins Hospital, Baltimore, Maryland—  
Internal Medicine  
Wilkerson, Stephen Young (Taichung, Taiwan) Naval Regional Medical Center, Portsmouth,  
Virginia—Pathology  
Williams, Lewis Thomas (Toccoa, Georgia) Massachusetts General Hospital, Boston,  
Massachusetts—Internal Medicine  
Wood, John Charles (Richmond, Virginia) University of Virginia Hospitals, Charlottesville  
Virginia—Family Practice  
Wright, Eugene Edward, Jr. (Wilmington, North Carolina) Duke Medical Center, Durham, North  
Carolina—Internal Medicine  
Yoder, Eric Monroe (Columbia, South Carolina) University of Virginia Hospitals, Charlottesville,  
Virginia—Family Practice





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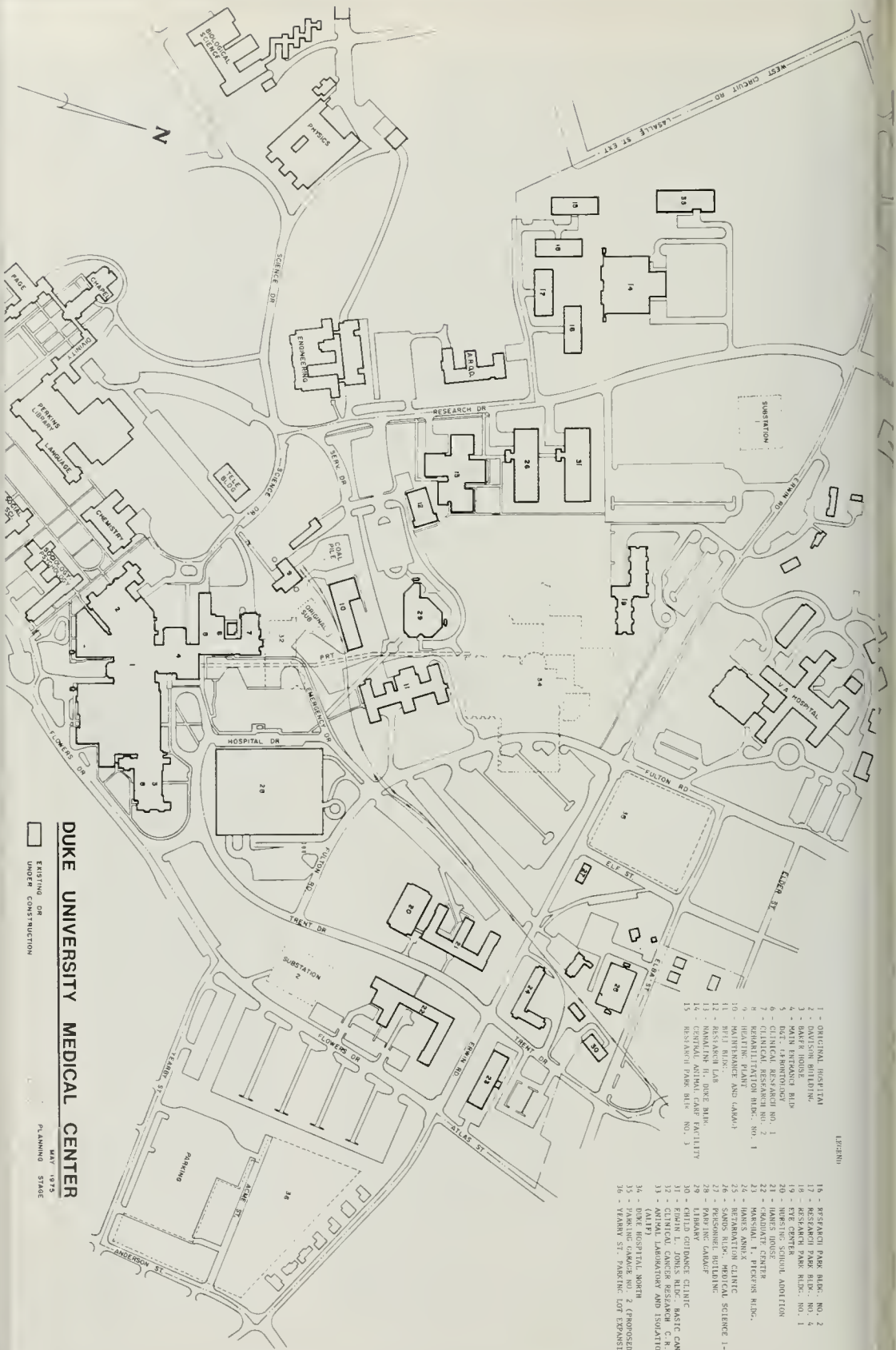


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*The School of Law*



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# Calendar of the School of Law 1979-80

## Fall Semester

1979

August	
19	Sunday, 7:30 P.M.—Meeting of first-year class
20	Monday, 8:30-12:30 P.M.—Registration for new students Monday, Classes begin for second- and third-year students
	Monday, 2:00 P.M.—Orientation for first-year students
21	Tuesday, Classes begin for first-year students
October	
20	Saturday, Fall vacation begins
25	Thursday, Classes resume after fall vacation
November	
22	Thursday, Thanksgiving holidays begin
26	Monday, Classes resume after Thanksgiving holidays
30	Friday, Fall semester classes end for second- and third-year students
December	
3	Monday, Fall semester classes end for first-year students
10	Monday, Fall semester examinations begin
19	Wednesday, Fall semester examinations end

## Spring Semester

1980

January	
7	Monday, Spring semester classes begin for all students
March	
8	Saturday, Spring vacation begins
18	Monday, Classes resume after spring vacation
April	
18	Friday, Spring semester classes end
28	Monday, Spring semester examinations begin
May	
7	Wednesday, Spring semester examinations end
10	Saturday, Commencement exercises begin
11	Sunday, Commencement

# University Administration

Terry Sanford, J.D., LL.D., D.H., L.H.D., D.P.A., *President*

A. Kenneth Pye, LL.M., LL.D., *Chancellor*

William Bevan, Ph.D., *Provost*

Charles B. Huestis, *Vice-President for Business and Finance*

William G. Anlyan, M.D., D.Sc., *Vice-President for Health Affairs*

Eugene J. McDonald, LL.M., *Vice-President for Government Relations and University Counsel*

Stephen Cannada Harward, A.B., C.P.A., *Treasurer and Assistant Secretary*

J. Peyton Fuller, A.B., *Assistant Vice-President and Corporate Controller*

Rufus H. Powell, LL.B., *Secretary of the University*

Harold W. Lewis, Ph.D., *Vice-Provost and Dean of the Faculty*

John C. McKinney, Ph.D., *Vice-Provost and Dean of the Graduate School*

John M. Fein, Ph.D., *Vice-Provost and Dean of Trinity College of Arts and Sciences*

Ewald W. Busse, M.D., Sc.D., *Associate Provost and Dean of Medical and Allied Health Education*

Roscoe R. Robinson, M.D., *Associate Vice-President for Health Affairs and Chief Executive Officer of Duke Hospital*

Frederick C. Joerg, M.B.A., *Assistant Provost for Academic Administration*

Anne Flowers, Ed.D., *Assistant Provost for Educational Program Development*

William J. Griffith, A.B., *Assistant Provost and Dean of Student Affairs*

Clark R. Cahow, Ph.D., *Assistant Provost and University Registrar*

Caroline L. Lattimore, Ph.D., *Assistant Provost and Dean of Minority Affairs*

Richard L. Wells, Ph.D., *Assistant Provost and Associate Dean of Trinity College of Arts and Sciences*

Joel L. Fleishman, LL.M., *Vice-Chancellor for Public Policy Education and Research; Director of the Institute for Policy Sciences and Public Affairs*

Mel Ray, M.B.A., *Vice-Chancellor for Data Processing*

Connie R. Dunlap, A.M.L.S., *University Librarian*

William E. King, Ph.D., *University Archivist*

Robert N. Sawyer, Ed.D., *University Educational Planning Officer and Director of Summer Educational Programs*





Altruism combined with realism; knowledge of fundamental principles and capacity to apply them; courage to insist on the right and patience to achieve it; understanding of the timidity of the weak; fearlessness of the domination of the powerful; sympathy for the mistakes of the indiscreet; caution of the craftiness of the unprincipled; enthusiasm for that which is fine and inspiring; reverence for that which is sacred; these are some of the attributes of great lawyers.

*Justin Miller*  
*Dean, 1930-34*  
*Duke University School of Law*

## Law Faculty

**Jean Taylor Adams, B.A., M.Ed., J.D., *Assistant Professor of Law***

B.A. 1972, M.Ed. 1975, J.D. 1979, Duke University. Professor Adams spent her early years in the area of Philadelphia, Pennsylvania. She was employed by Duke University for two years as an Admissions Counselor and for two years in the Development Office in the estate planning division. She compiled an unusually distinguished academic record in law school, where she also served as Editor-in-Chief of the Duke Law Journal. She begins her professional career in law in 1980 as a part-time Assistant Professor of Law at Duke, teaching in the area of estate and gift taxation.



**Katharine Tiffany Bartlett, B.A., M.A., J.D., *Lecturer in Law***

B.A. 1968, Wheaton College; M.A. 1969, Harvard University; J.D. 1975, University of California, Berkeley. A native of Connecticut, Ms. Bartlett served for three years as a secondary school teacher in that state before entering law school. She commenced her legal career with a judicial clerkship in the Supreme Court of California. From 1976 to 1979, she worked as a Staff Attorney at the Legal Aid Society of Alameda County; her efforts were concentrated on planning litigation strategy for the society. Coming to North Carolina in 1979, she continues in the work of legal services for the indigent and in the area of civil litigation.



**Sarah Sun Beale, B.A., J.D., *Associate Professor of Law***

B.A. 1971, J.D. 1974, University of Michigan. A native of Toledo, Ohio, Professor Beale began her professional career as a judicial clerk in the United States Court of Appeals. Beginning in 1975, she served two years with the United States Department of Justice in the Office of Legal Counsel to the President and two years in the Office of the Solicitor General of the United States. She begins her teaching career at Duke in 1979. Her academic interests are in the fields of criminal law and family law.



**Donald H. Beskind, A.B., J.D., LL.M., *Associate Professor of Law***

A.B. 1969, George Washington University; J.D. 1973, University of Connecticut; LL.M. 1977, Duke University. Professor Beskind is from Great Neck, New York, and Westport, Connecticut. He engaged in private practice in Denver for two years before coming in 1975 to Duke, where he is currently Director of Clinical Studies. Since 1976, he has prepared instructional materials and led programs for the National Institute for Trial Advocacy.



**Anthony J. Bocchino, A.B., J.D., *Associate Professor of Law***

A.B. 1969, Bucknell University; J.D. 1972, University of Connecticut. Professor Bocchino is a native of Torrington, Connecticut. He began his professional career as a Lecturer and Codirector of the Legal Clinic at the University of Connecticut. He came to Duke in 1973 as an instructor. In 1974, he was given a professorial appointment and was named Director of Clinical Studies. In 1979-80, Professor Bocchino will be on leave with the lawyer task force conducting the investigation of the General Services Administration.



**H. Keith H. Brodie, A.B., M.D.,** *Professor of Psychiatry and Senior Lecturer in Law*

A.B. 1961, Princeton University; M.D. 1965, Columbia University. Doctor Brodie served at hospitals in New Orleans and New York City before becoming a Clinical Associate with the National Institute of Mental Health in 1968. In 1970, he joined the medical faculty of Stanford University. He was awarded a first prize in 1971 for research by the American Psychological Association. In 1973, he became an Associate Editor of the *American Journal of Psychiatry*. He came to Duke in 1974 as Professor and Chairman of the Department of Psychiatry and Director of Psychiatric Services at Duke University Medical Center. He is an officer of the American Psychiatric Association. His most recent book is *Controversy in Psychiatry*, published in 1978. He teaches in the area of psychiatry and law.



**Paul D. Carrington, B.A., LL.B.,** *Professor of Law*

B.A. 1952, University of Texas; LL.B. 1955, Harvard University. Professor Carrington is a native of Dallas, Texas. His professional experience includes a brief stint in private practice in Dallas and in a military law office, as well as occasional work for the American Civil Liberties Union and the American Association of University Professors. Since his teaching career began in 1957, he has taught at more than a dozen law schools, including most notably the University of Michigan, where he served from 1965 to 1978, before becoming Dean at Duke. He has been active in judicial law reform efforts, particularly in regard to appellate courts and procedure. He has also been involved in the affairs of the Association of American Law Schools, most recently as Chairman of its Accreditation Committee. His public activities also include a term on the Ann Arbor Board of Education. He has published in the fields of civil procedure, education law, and legal education.



**George C. Christie, A.B., J.D., S.J.D.,** *James B. Duke Professor of Law*

A.B. 1955, J.D. 1957, Columbia University; S.J.D. 1966, Harvard University. A native of New York City, Professor Christie was Editor-in-Chief of the *Columbia Law Review*. He commenced his legal career with private practice in Washington, D.C. In 1960-61, he was a Ford Fellow at Harvard Law School; and in 1961-62, he was a Fulbright Scholar at Cambridge University, where he earned a Diploma in International Law. He then joined the law faculty of the University of Minnesota, where he taught for almost four years. In 1966, he returned to Washington to serve as Assistant General Counsel for the Near East and South Asia of the Agency for International Development. He has been active in the International Law Section of the American Bar Association and has served for five years on the editorial board of the *American Journal of Legal History*. His chief academic interests are in the areas of torts and jurisprudence, in both of which he has published widely; he is the editor of a coursebook in jurisprudence published in 1973.





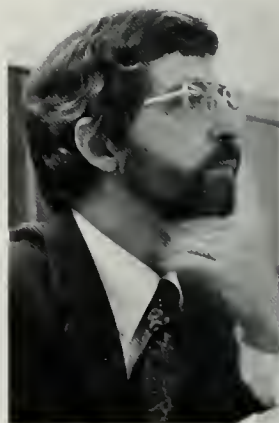
**James D. Cox, B.S., J.D., LL.M., *Professor of Law***

B.S. 1966, Arizona State University; J.D. 1969, University of California, Hastings College of the Law; LL.M. 1971, Harvard University. Professor Cox is a native of Ellinwood, Kansas. He entered law teaching as a teaching fellow at Boston University, following which he taught at the University of San Francisco, Stanford University, and the University of California, Hastings College of the Law, before coming to Duke in 1979. He has focused his writing and teaching in the areas of corporate and securities law.



**Walter E. Dellinger III, A.B., LL.B., *Professor of Law***

A.B. 1963, University of North Carolina; LL.B. 1966, Yale University. Professor Dellinger is a native of Charlotte, North Carolina. He taught political and civil rights at the University of Mississippi from 1966 to 1968. In 1968-69, he served as a judicial clerk in the Supreme Court of the United States. He joined the Duke law faculty in 1969, serving as Associate Dean from 1974 to 1976 and as Acting Dean from 1976 to 1978. He has also taught at the University of Southern California and the University of Michigan. He has, since 1969, served as Consultant and Draftsman to the North Carolina Criminal Code Commission.



**Deborah A. Demott, B.A., J.D., *Associate Professor of Law***

B.A. 1970, Swarthmore College; J.D. 1973, New York University. Professor DeMott spent her early years in DuBois, Pennsylvania, a community in the mountainous western region of that state. She served as Articles Editor of the *New York University Law Review*. She began her professional career with a judicial clerkship in a federal court in New York City, and later practiced with a large law firm in that city, until she joined the Duke law faculty in 1975. She has also taught at the University of Texas. She is the editor of a 1979 book on corporate governance.



**Robinson O. Everett, A.B., LL.B., *Professor of Law***

A.B. 1947, LL.B. 1950, Harvard University. Professor Everett is a native of Durham, North Carolina. He served for several years as a Legal Officer in the Air Force and as a Commissioner of the United States Court of Military Appeals. He returned to Durham to enter a general practice, which he continues to the present. From 1961 to 1964, he served as Counsel to the Subcommittee on Constitutional Rights of the United States Senate Judiciary Committee. He has been active in the affairs of the North Carolina bar and of the community of Durham. He has long served as a Commissioner on Uniform State Laws and has been active in various law reform efforts. He has published on many legal topics, most notably military justice and local government law. His teaching at Duke began as early as 1950. He was elected to regular membership in the faculty in 1967.



**Adrienne Meltzer Fox, A.B., J.D., LL.M., *Lecturer in Law***

A.B. 1970, Goucher College; J.D. 1974, Catholic University; LL.M. 1979, Duke University. Ms. Fox is a native of Shaker Heights, Ohio. She began her professional career as a Reginald Heber Smith Fellow and staff attorney at the Legal Aid Society of Durham. She was a litigator in that office and also represented the Legal Services program in lobbying activities in Raleigh. From 1977 to 1979, she was a John S. Bradway Fellow at Duke, participating in clinical instruction. She continues to practice in Durham and to offer clinical instruction in the area of civil litigation. She is also a member of the Durham City Council.



**Ted J. Fiflis, B.S., LL.B., *Visiting Professor of Law***

B.A. 1954, Northwestern University; LL.B. 1957, Harvard University. A native of Chicago, Illinois, Professor Fiflis returned to private practice in that city from 1957 to 1965. During that period, he returned to Harvard for a year, in 1959-60, as a Teaching Fellow. He joined the law faculty of the University of Colorado in 1965, where he continues to teach. He has also taught at New York University, the University of Chicago, and the University of California at Davis. His publications are in the areas of accounting and corporations; he is coeditor of a 1977 coursebook in accounting for business lawyers.



**Joel L. Fleishman**, A.B., J.D., M.A., LL.M., *Professor of Law and Public Policy Sciences*

A.B. 1955, J.D. 1959, M.A. (Drama) 1959, University of North Carolina; LL.M. 1960, Yale University. Professor Fleishman is a native of Fayetteville, North Carolina. He began his career in 1960 as Assistant to the Director of the Walter E. Meyer Research Institute of Law at Yale. From 1961 to 1965, he served as Legal Assistant to the Governor of North Carolina. He then returned to Yale, first as Director of the Yale Summer High School, and then as Associate Provost for Urban Studies and Programs. In 1969, he became Associate Chairman of the Center for the Study of the City and Its Environment and Associate Director of the Institute of Social Science at Yale. In 1971, he came to Duke as a member of the law faculty and as Director of the Institute of Policy Sciences and Public Affairs. He is also Vice-Chancellor of the University. His principal writings deal with legal regulation and financing of political activities; his current work is on political ethics. He will be on leave of absence for the academic year 1979-80, devoting himself to University administration.



**Charles O. Galvin**, B.S.C., M.B.A., J.D., S.J.D., *Visiting Professor of Law*

B.S.C. 1940, Southern Methodist University; M.B.A. 1941, J.D. 1947, Northwestern University; S.J.D. 1961, Harvard University. A native of Texas, Professor Galvin practiced in Chicago and Dallas before beginning his teaching career in 1952. He has taught at Southern Methodist since that time, serving as Dean from 1963 to 1978. He has also taught at Northwestern and Harvard Universities and the University of Michigan. He has been active in the affairs of the American Bar Association and the Texas Bar Association. His scholarly publication has been devoted chiefly to the field of taxation and includes several works published under the auspices of the American Bar Foundation and the American Enterprise Institute.



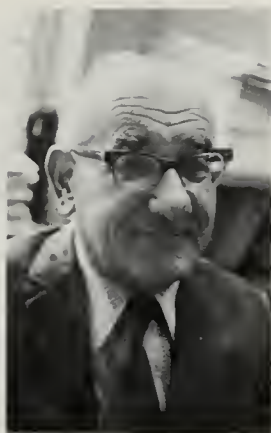
**Pamela Gann**, B.A., J.D., *Associate Professor of Law*

B.A. 1970, University of North Carolina; J.D. 1973, Duke University. A native of Monroe, North Carolina, Professor Gann was Articles Editor of the *Duke Law Journal*. She practiced with private firms in Atlanta and Charlotte before returning to Duke to teach in 1975. She has also taught at Washington University and the University of Michigan. She is the coeditor of a 1979 casebook on corporate taxation.



**Kazimierz Grzybowski, M.L.L., D.L.L., S.J.D.,** *Professor of Law and Political Science*

M.L.L. 1931, D.L.L. 1934, University of Lwow; S.J.D. 1933, Harvard University. A native of Lwow, Poland, Professor Grzybowski began his academic career at the university there. For three years preceding the invasion of Poland, he served as a judge of the District Court. He was in military service throughout World War II. In 1951, he accepted an editorial position with the Library of Congress. From 1960 to 1962, he served as a consultant to Rand Corporation. He came to Duke in 1964. In addition to the University of Lwow, he has taught at a number of other universities, including Yale, Strasbourg, Michigan, and Leiden. Professor Grzybowski has published widely on the subjects of comparative law and international trade.



**Clark C. Havighurst, A.B., J.D.,** *Professor of Law*

A.B. 1955, Princeton University; J.D. 1958, Northwestern University. Professor Havighurst is a native of Evanston, Illinois. He spent two years in the military service, one year as a Research Associate, and three years in private law practice in New York City before beginning his academic career at Duke in 1964. Professor Havighurst was for five years the Editor of *Law and Contemporary Problems*. He has also served as Visiting Senior Scientist at the Health Services Research Center and as a resident consultant of the Federal Trade Commission in Washington, D.C. His chief academic interest is in the regulation of the health care industry, and he is Director of the Program on Legal Issues in Health Care. He has also taught at Northwestern and Stanford Universities.



**David L. Lange, B.S., LL.B.,** *Professor of Law*

B.S. 1960, LL.B. 1964, University of Illinois. Professor Lange, a native of downstate Illinois, commenced his professional career with a private law firm in Chicago that included major media enterprises among its clients. He has also had substantial professional experience in radio, television, and motion picture production, and is a member of the Governing Committee of the ABA Forum on the Entertainment and Sports Industries. He joined the Duke law faculty in 1971, where he has since served as General Editor of *Law and Contemporary Problems* and as Chairman of the Center for the Study of Communications Policy. Although his legal writing has focused on the First Amendment as it affects the media, his principal writing efforts are currently directed at the completion of a novel. His principal teaching interests lie in the areas of torts, the First Amendment, and entertainment and communications law.





**Arthur Larson, A.B., B.A., M.A., B.C.L., J.D., D.C.L., LL.D., L.H.D.,**  
*James B. Duke Professor of Law*

A.B. 1931, LL.D., 1953 (Hon.), Augustana College; B.A. 1935, M.A. (Juris.), 1938, B.C.L. 1957, D.C.L. 1957, Oxford University. Professor Larson is a native of South Dakota. He studied law as a Rhodes Scholar. He practiced law with a private firm in Milwaukee and has held a number of important governmental positions, including Division Counsel in the Office of Price Administration from 1941 to 1954, Chief of the Scandinavian Branch of the Foreign Economic Administration in 1944 and 1945, Undersecretary of Labor from 1954 to 1956, Director of the United States Information Agency in 1946 and 1957, and Special Assistant to the President in 1957 and 1958. Having previously taught at the Universities of Tennessee and Wisconsin and Cornell University, and having served as Dean of the Law School at the University of Pittsburgh, he joined the Duke law faculty in 1958. He continued for a decade to serve as a consultant to Presidents Eisenhower and Johnson, and to the State Department. As Director of the Rule of Law Research Center at Duke, he has published a number of books on international law. He is also the author of definitive treatises in the areas of industrial accident compensation and employment discrimination. Professor Larson holds seven honorary degrees and is an honorary Fellow of Pembroke College, Oxford.



**Betsy Levin, A.B., LL.B.,** *Professor of Law*

A.B. 1956, Bryn Mawr College; LL.B. 1966, Yale University. A native of Baltimore, Maryland, Professor Levin was a professional geologist for ten years with the United States Geological Survey before completing law school. After a year of judicial clerkship in the United States Court of Appeals, she was a White House Fellow and Special Assistant to the United States Ambassador to the United Nations. In 1968, she joined the research staff of the Urban Institute, where she served as Director of Education Studies. She taught at Yale and Georgetown before joining the Duke law faculty in 1973. Her principal works are in the areas of education law and local government finance. She will be on leave for the academic year 1979-80, studying legal problems of public education in California.



**Susan H. Lewis, A.B., J.D.,** *Senior Lecturer in Law*

A.B. 1967, Randolph-Macon Woman's College; J.D. 1970, University of Texas. Ms. Lewis spent her early years in New Orleans and Staunton, Virginia. She served as an officer of the *Texas Law Review* before commencing her professional career with a judicial clerkship in the United States Court of Appeals. She then practiced law for three years with a private firm in Houston. In 1974, she entered teaching at the University of North Carolina. She has been a sometime teacher at Duke since 1976. Her major efforts are presently devoted to her law practice in Chapel Hill, where she specializes in the nonadjudicative resolution of family disputes.



**Charles H. Livengood, Jr., A.B., J.D., *Professor of Law***

A.B. 1931, Duke University; J.D. 1934, Harvard University. A native of Durham, North Carolina, Professor Livengood commenced his legal career with six years in private practice in New York City. In 1940, he joined the Department of Labor, first as Regional Attorney and then as Chief of the Wage and Hour Section. After three years of naval service, he returned to Durham and private practice. He has been teaching at Duke since 1946 but has also taught at a number of other universities, including a term as Fulbright Lecturer at the University of Sydney. While teaching, he has served a term as the public member of a Wage Stabilization Board and has served since 1966 on the North Carolina General Statutes Commission, of which he has been Chairman since 1970. He has also been active in the field of labor arbitration and in the affairs of the American Bar Association Section on labor relations Law.



**Richard C. Maxwell, B.S.L., LL.B., *Visiting Professor of Law***

B.S.L. 1941, LL.B. 1947, University of Minnesota. Professor Maxwell is a native of Minnesota and served four years with the Navy. On leaving law school, he accepted a faculty appointment at the University of North Dakota, moving on to the University of Texas in 1949 and to the University of California at Los Angeles in 1953. In 1952-53, he was an attorney with Amerada Petroleum Corporation. He was the Dean at the University of California at Los Angeles from 1959 to 1969, and President of the Association of American Law Schools in 1972. He has taught at many law schools, including Queen's University in Belfast, Columbia University, and the Universities of Minnesota and Singapore. He is an editor of the *Oil and Gas Reporter* and a member of the Committee on Gas Production Opportunities of the National Resources Council. He has published books on social legislation, secured transactions, and mineral law.



**Eugene J. McDonald, B.S., J.D., LL.M., *Senior Lecturer in Law***

B.S. 1954, J.D. 1957, University of San Francisco; LL.M. 1958, Georgetown University. Mr. McDonald is from San Francisco, California. He practiced law privately in that city for five years before taking the presidency of the Human Resources Development Corporation in Washington, D.C., in 1965. In 1968, he became General Counsel of the International Textbook Company, and in 1972, he was promoted to Chief Executive of its International Division, located in Paris. In 1977, he came to Duke as Vice-President for Governmental Relations and General Counsel, serving also as an adjunct member of the law faculty. He has previously taught at Georgetown University and the Universities of Virginia and San Francisco.



**Paul Oberst, A.B., J.D., LL.M.,** *Visiting Professor of Law*

A.B. 1936, Evansville College; J.D. 1939, University of Kentucky; LL.M. 1942, University of Michigan. Professor Oberst is a native of Kentucky. He practiced law in Kentucky and in Kansas City, Missouri, before entering the Navy in 1942. Since 1946, he has been on the law faculty at the University of Kentucky, of which he has twice served as Acting Dean. He has also taught at the Universities of Michigan and Chicago and New York University. He has been active as a civil libertarian in the American Civil Liberties Union, in the American Association of University Professors, and as Chairman of the Kentucky Human Rights Committee. He has also served on many committees of the Association of American Law Schools, including its Executive Committee. His primary teaching interest lies in the area of administrative law.



**Jonathan K. Ocko, B.A., M.A., M.Phil., Ph.D.,** *Lecturer in Law*

B.A. 1966, Trinity College; M.Phil. 1971, M.A. 1972, Ph.D. 1975, Yale University. A native of New York City, Professor Ocko taught at Clark University and Wellesley College before joining the faculty of North Carolina State University in 1977. During the academic year 1978-79, he studied law at Harvard University, where he also taught Asian law. His principal scholarly efforts have been in the field of Chinese history and law.



**Bruce M. Owen, B.A., Ph.D.,** *Lecturer in Law*

B.A. 1965, Williams College; Ph.D. 1970, Stanford University. A native of Worcester, Massachusetts, Professor Owen has served as Chief Economist in the Office of Telecommunications Policy of the Executive Office of the President. In 1970-71, he was a Brookings Fellow, and in 1974-75, he was a National Fellow of the Hoover Institution. From 1973 to 1978, he was a member of the Stanford University economics faculty. He came to Duke in 1978 as a member of the business faculty and as Director of the Center for the Study of Regulation of Private Enterprise. His books are *Television Economics* (1974), *Economics and Freedom of Expression: Media Structure and the First Amendment* (1975), and *The Regulation Game: Strategic Use of the Administrative Process* (1978). He will be on leave for the academic years 1979-81, serving as Director of the Economic Policy Office of the Antitrust Division of the United States Department of Justice, in Washington, D.C.



**J. Francis Paschal, A.B., LL.B., A.M., Ph.D., *Professor of Law***

A.B. 1935, LL.B. 1938, Wake Forest College; A.M. 1942, Ph.D. 1948, Princeton University. A native of Wake Forest, North Carolina, Professor Paschal taught law there briefly following his graduation. In 1940, he commenced the study of politics, which was interrupted for four years of service in the Navy. After completing his doctorate in politics following the war, he returned to law as the Research Director for the North Carolina Commission for the Improvement of the Administration of Justice. From 1949 to 1954, he practiced law with a private firm in Raleigh. He joined the Duke law faculty in 1954. He has since served a term as Chairman of the North Carolina Civil Rights Commission and on the North Carolina General Statutes Commission. He has been Chairman of the University's Academic Council. He has written on a variety of legal subjects, including a full-length biography of Justice George Sutherland of the United States Supreme Court.



**William P. Pinna, B.S., J.D., *Senior Lecturer in Law***

B.S. 1966, De Paul University; J.D. 1968, Duke University. Mr. Pinna is a native of Chicago, Illinois. He is a Certified Public Accountant and was employed by Arthur Anderson & Company for four years. Since graduation from law school, he has practiced in Durham and Raleigh, concentrating in the areas of estate planning and tax law. He has also taught accounting and taxation at North Carolina State University since 1968, and has several times been named an outstanding teacher in that institution.



**E. K. Powe, A.B., J.D., *Senior Lecturer in Law***

A.B. 1948, J.D. 1950, University of North Carolina. Mr. Powe is a native of Durham, North Carolina, and has practiced law in the city since graduation from law school. He served a term in the North Carolina General Assembly from 1955 to 1957. He has also served as a member of the North Carolina General Statutes Commission. He has been active in the local, state, and American bar associations. He has been teaching a course in estate planning at Duke since 1972.





**Walter F. Pratt, Jr., B.A., D.Phil., J.D., Assistant Professor of Law**

B.A. 1968, Vanderbilt University; D.Phil. (Politics) 1974, Oxford University; J.D. 1977, Yale University. Professor Pratt is a native of Mississippi. He served for three years with the Army before his term as a Rhodes Scholar. He served as Articles Editor of the *Yale Law Journal* while completing work on his book, *Privacy in Britain*. He commenced his career in law with one judicial clerkship in the United States Court of Appeals, going on to another in the Supreme Court of the United States in 1978-79. He joins the Duke law faculty in 1979.



**M. Kathleen Price, B.A., M.S., J.D., Professor of Law**

B.A. 1963, University of Florida; M.S. (Library Science) 1967, Florida State University; J.D. 1973, University of Illinois. Professor Price is a native of Kenmore, New York. She began her professional library and law school career as a librarian at the University of Alabama Law Library in 1967. In 1970, she moved to the University of Illinois, where she became Head Reference and Documents Librarian and an Instructor in the Graduate Library School. She completed law school, where she served as an officer of the *University of Illinois Law Forum* while also editing the *University of Illinois Law Library Bibliographies and Research Aids*. She practiced law in Chicago from 1973 until she joined the Duke law faculty in 1975. She is the Law Librarian.



**A. Kenneth Pye, B.A., J.D., LL.M., LL.D., Professor of Law**

B.A. 1951, University of Buffalo; J.D. 1953, LL.M. 1955, LL.D. 1978, Georgetown University; LL.D. 1979, Belmont Abbey College. Professor Pye is a native of New York. Following graduation from law school, he entered military service, after which he joined the law faculty of Georgetown University, where he served as Associate Dean from 1961 to 1966. He joined the Duke law faculty in 1966. He has taught at a number of other universities, including Johann Wolfgang Goethe University in Germany, Banares Hindu University in India, and Monash University in Australia. He became Dean of the Law School in 1968, serving for two years before becoming Chancellor of the University in 1970. He left the Office of Chancellor in 1971 to serve for three years as University Counsel, returned to the Law School as Dean in 1973, and resumed the Chancellorship in 1976. He served as President of the Association of American Law Schools in 1977. He is known for his scholarship chiefly in the field of criminal procedure.



**William Arnell Reppy, A.B., J.D., *Professor of Law***

A.B. 1963, J.D. 1966, Stanford University. Professor Reppy is a native of Oxnard, California. He commenced his professional career with two judicial clerkships—one in the Supreme Court of California, followed by another in the Supreme Court of the United States. He then practiced law for three years with a private firm in Los Angeles, until joining the Duke law faculty in 1971. He has also taught at the Universities of California and Michigan. He serves from time to time as an Administrative Law Judge for the North Carolina Department of Human Resources. His principal scholarly work is in the areas of marital property rights and conflict of laws.



**Horace B. Robertson, Jr., B.S., J.D., M.S., *Professor of Law***

B.S. 1945, U.S. Naval Academy; J.D. 1953, Georgetown University; M.S. 1968, George Washington University. Professor Robertson is a native of Kannapolis, North Carolina. After five years as a line officer in the Navy, he was assigned to law study. After achieving a distinguished record, including service as Editor-in-Chief of the *Georgetown Law Journal*, he returned to active duty as a Judge Advocate, rising ultimately to be the highest ranking legal officer in the Navy in 1975. While on active duty, he served as a member of the United States Delegation to the United Nations Law of the Sea Conference in 1958 and to the United Nations Seabeds Committee's Preparatory Session in 1973. He joined the Duke law faculty in 1976.



**Thomas D. Rowe, Jr., B.A., B.Phil., J.D., *Professor of Law***

B.A. 1964, Yale University; B.Phil. 1967, Oxford University; J.D. 1970, Harvard University. A native of Ann Arbor, Michigan, Professor Rowe achieved preeminent academic records both as an undergraduate and as a law student; in the interim, he was also a Rhodes Scholar. He commenced his professional career as a judicial clerk in the Supreme Court of the United States. He served for one and one-half years as Assistant Counsel to a Subcommittee of the United States Senate and then practiced law with a private firm in Washington, D.C. He joined the Duke law faculty in 1975. He has written in the fields of Constitutional Law and Civil Procedure. He will be on leave for the academic year 1979-80, while teaching at Georgetown University.



**Christopher H. Schroeder**, B.A., M.Div., J.D., *Associate Professor of Law*  
 B.A. 1968, Princeton University; M.Div. 1971, Yale University;  
 J.D. 1974, University of California. Professor Schroeder is a native of  
 Saginaw, Michigan. He served as Editor-in-Chief of the *California Law*  
*Review*. He practiced law with a San Francisco firm for two years  
 before organizing a smaller firm in that city that emphasized environ-  
 mental litigation. He served as Director of the Energy and Environ-  
 ment Project of the Earl Warren Institute of the University of  
 California and taught in the Energy and Resources Program and in  
 the Law School of that university. He joins the Duke law faculty in  
 1979. He is also a Research Associate in the School of Forestry and  
 Environmental Studies.



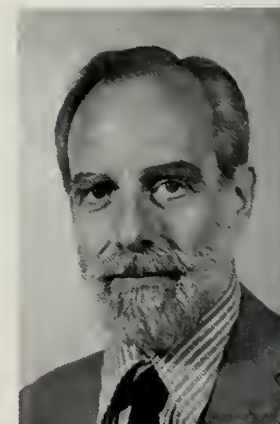
**Cynia B. Shimm**, A.B., M.D., *Senior Lecturer in Law*

A.B. 1945, Cornell University; M.D. 1950, Yale University. Dr.  
 Shimm is a native of New York City. Following postgraduate medical  
 training in pathology and internal medicine, followed by a stint of  
 general practice, she pursued the study of psychiatry and psychoa-  
 nalysis, in which specialties she has been certified. She has offered  
 courses in psychiatry and law at Duke since 1974. She is Chairman of  
 the Department of Psychiatry at Durham County General Hospital  
 and is also a Clinical Professor of Psychiatry at the Duke University  
 Medical Center.



**Melvin G. Shimm**, A.B., LL.B., *Professor of Law*

A.B. 1947, Columbia University; LL.B. 1950, Yale University. A  
 native of New York City, Professor Shimm practiced law privately in  
 that city from 1950 to 1951 and as an attorney for the Wage  
 Stabilization Board in Washington, D.C., from 1951 to 1952 before  
 entering law teaching as a Bigelow Fellow at the University of  
 Chicago from 1952 to 1953. He has been at Duke since 1953, serving  
 as Associate Dean since 1978. He has also taught at New York  
 University and the Universities of Southern California, North Caro-  
 lina, Michigan, and Texas. He has been heavily invested in the Law  
 School's publication program, editing *Law and Contemporary Problems*,  
 the *Journal of Legal Education*, and the American sections of the *Business*  
*Law Review* and the *Journal of Business Law*; and organizing and serving  
 first as Faculty Editor and then as Faculty Adviser of the *Duke Law*  
*Journal*. He has also served as Senior Consultant with the Brookings  
 Institution and as Director of the Association of American Law  
 Schools Orientation Program in American Law. His teaching interests  
 lie primary in the commercial law areas.



**Allen G. Siegel, B.B.A., LL.B., *Senior Lecturer in Law***

B.B.A. 1958, College of the City of New York; LL.B. 1960, Duke University. A native of Chicago, Mr. Siegel commenced his legal career in private practice in Jacksonville, Florida, after which he served as an attorney for the National Labor Relations Board in its regional offices in Albuquerque and Atlanta. In 1964, he re-entered private practice with a large law firm in Washington, D.C., where he continues to devote himself to labor relations.



**Bertel M. Sparks, B.S., LL.B., LL.M., S.J.D., *Professor of Law***

B.S. 1938, Eastern Kentucky University; LL.B. 1948, University of Kentucky; LL.M. 1949, S.J.D. 1955, University of Michigan. Professor Sparks is a native of McKee, Kentucky. From 1938 to 1941, he taught in the public schools of Harlan County, Kentucky. In 1941, he entered the military and served for four and one-half years as a special agent of the United States Army Counterintelligence Corps. Following his legal education, he commenced his career in law teaching at New York University in 1949; he remained a member of that faculty until he came to Duke in 1966. His published work is chiefly in the area of trusts and estates and in law and economics.



**William W. Van Alstyne, B.A., J.D., LL.D., *William R. Perkins and Thomas C. Perkins Professor of Law***

B.A. 1955, University of Southern California; J.D. 1958, Stanford University; LL.D. 1976, Wake Forest University; LL.D. 1979, College of William and Mary. Professor Van Alstyne is a native of Chico, California. He was professionally employed first by the California Department of Justice and then by the United States Department of Justice. He began his teaching career at Ohio State University in 1959, coming to Duke in 1965. He has taught at a number of other law schools, including Stanford University and the Universities of California at Los Angeles, Illinois, and Pennsylvania. He studied at the Hague Academy of International Law in 1961 and was a Senior Fellow at Yale in 1964-65. He has long been active in the civil rights movement and in the affairs of the American Civil Liberties Union. He has been especially active in the American Association of University Professors, of which he served as President in 1975-76. He is widely known for his writing and his speaking on the subject of constitutional law.





**Patricia Hamm Wagner, A.B., J.D., *Lecturer in Law***

A.B. 1958, Wittenberg University; J.D. 1974, Duke University. Ms. Wagner was Budget Officer and Administrative Assistant to the Chief of Pediatrics at Johns Hopkins University Hospital from 1958 to 1966. For a year after graduation from law school, she served as Assistant University Counsel at Duke. In 1975, she became a staff attorney in the office of the Attorney General of North Carolina, serving as Hospital Attorney to North Carolina Memorial Hospital. In 1977, she came to Duke as Associate University Counsel and General Counsel to Duke University Medical Center. She offers a course in the law school in the area of professional malpractice.



**John C. Weistart, A.B., J.D., *Professor of Law***

A.B. 1965, Illinois Wesleyan University; J.D. 1968, Duke University. Professor Weistart is a native of Minonk, Illinois. He was Editor-in-Chief of the *Duke Law Journal*. He served for a year as a judicial clerk on the Supreme Court of Illinois before joining the Duke law faculty in 1969. He served for three years as Editor of *Law and Contemporary Problems* and as American Editor of the *Journal of Business Law*. He has also taught at the Universities of California at Los Angeles, Virginia, and Harvard. He is known for his writing in the field of commercial law, and he is the senior author of a 1979 text on the law of sports.



## Emeriti

**John S. Bradway, A.B., A.M., LL.B., LL.D.,** *Professor of Law Emeritus*

A.B. 1911, A.M. 1915, LL.D. 1957, Haverford College; LL.B. 1914, University of Pennsylvania. General Practice, 1914–29; Legal Aid Society of Philadelphia, 1914–20; Chief Counsel, Philadelphia Legal Aid Bureau, 1920–22; Secretary, National Association of Legal Aid Organizations, 1923–40, President, 1940–42; Visiting Professor of Law and Director of the Legal Aid Clinic, University of Southern California, summer, 1928; Professor of Law and Director of the Legal Aid Clinic, University of Southern California, 1929–31; Vice-President, North Carolina Bar Association, 1945–46; Visiting Professor, University of North Carolina School of Social Work, 1949–59. Professor of Law and Director of the Legal Aid Clinic, Duke University, 1931–59; Professor of Law Emeritus, since 1959.

**Edwin C. Bryson, LL.B.,** *Professor of Law Emeritus*

University of North Carolina, 1922–25; Duke University, 1932–33; LL.B. 1937, University of Oregon. General Practice, 1927–30. Assistant to Duke University Legal Aid Clinic, 1931–47. Duke University Counsel, 1945–71; Associate Professor of Law, 1947–54; Professor of Law, 1954–71, Professor of Law Emeritus, since 1971.

**Elvin R. Latty, B.S., J.D., J.Sc.D.,** *William R. Perkins Professor of Law Emeritus and Dean Emeritus*

B.S. 1923, Bowdoin College; J.D. 1930, University of Michigan; J.Sc.D. 1936, Columbia University. Instructor in Romance Languages, University of Vermont, 1923–27; General Practice, 1930–33; Special Fellow, Columbia University, 1933–34; Associate Professor of Law, University of Kansas, 1934–35; Professor of Law, University of Missouri, 1935–37; Visiting Professor of Law, George Washington University, summer, 1937, Stanford University, summer, 1938, University of North Carolina, summer, 1942, 1947, 1949, 1956, University of Texas, summer, 1951, University of Puerto Rico, spring, 1968, University of Florida, summer, 1970; Fulbright Lecturer, University of Pavia, Italy, 1954; Special Assistant to the American Ambassador, Caracas, 1942–43; Acting Assistant Chief, Foreign Funds Control Division, United States Department of State, 1943. Professor of Law, Duke University, since 1937; Dean, School of Law, 1958–66; William R. Perkins Professor of Law Emeritus and Dean Emeritus, since 1973.



# Law School Staff

## Administrative Staff

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Melvin G. Shimm, *Associate Dean*  
Charles R. Howell, *Assistant Dean, Admissions and Financial Aid*  
Roland R. Wilkins, *Assistant Dean, Alumni and Development*  
Peggy House, *Placement Director*  
Mary Jane Flowers, *Staff Assistant*  
Mary A. Monroe, *Staff Assistant*  
Karen Haywood, *Senior Recorder*

## Law Library Staff

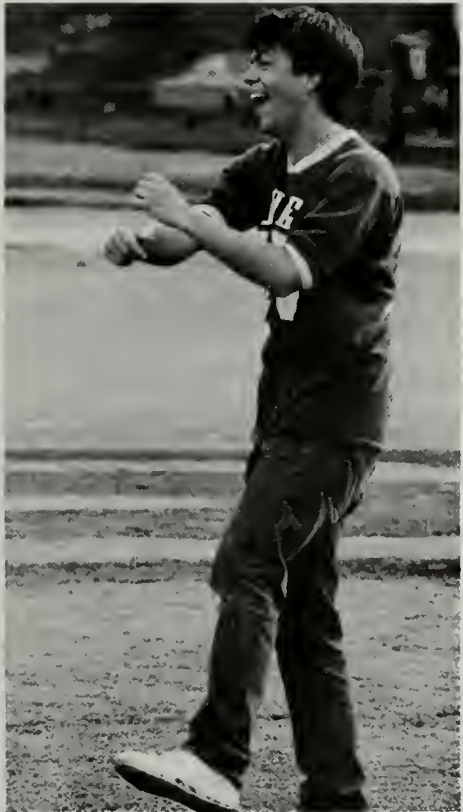
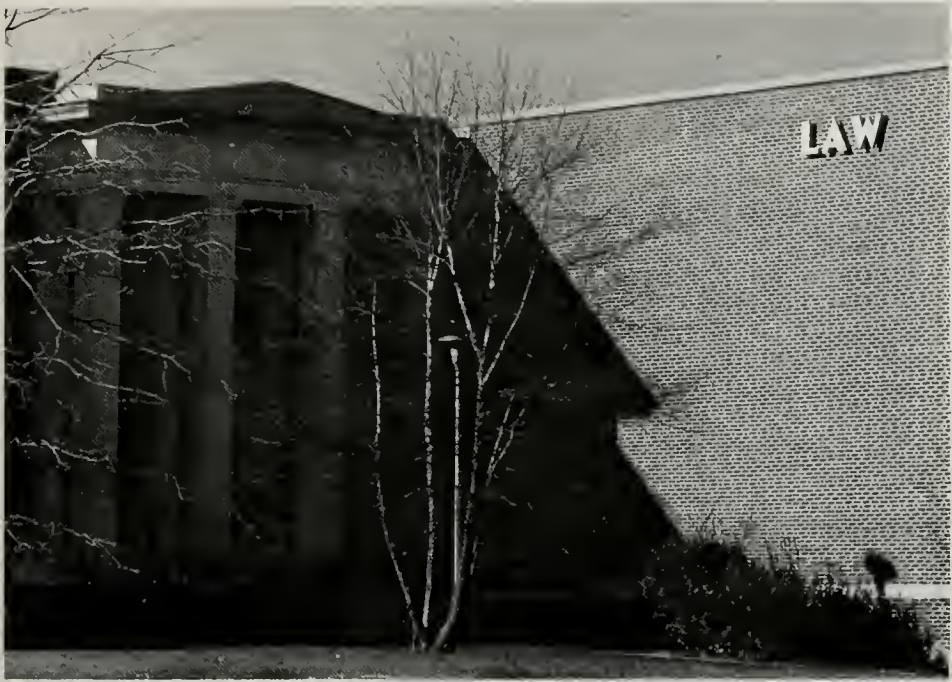
M. Kathleen Price, B.A., M.S., J.D., *Law Librarian*  
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Janeen J. Denson, A.B., M.S.L.S., *Circulation Librarian*  
Claire M. Germain, B.A., LL.B., M.C.L., M.L.L., *Reference/Documents Librarian*  
Katherine Kott, B.A., M.S.L.S., *Cataloging Librarian*  
Margaret D. Martin, B.A., M.L.S., *Acquisitions Librarian*  
Marian F. Parker, B.A., J.D., M.S.L.S., *Research Librarian*  
Gretchen P. Wolf, B.A., M.S., *Cataloging Librarian*

## Clinical Staff

Donald H. Beskind, *Director*  
Deborah G. Mailman, *Graduate Fellow in Clinical Education*  
Brent R. Taylor, *Graduate Fellow in Clinical Education*

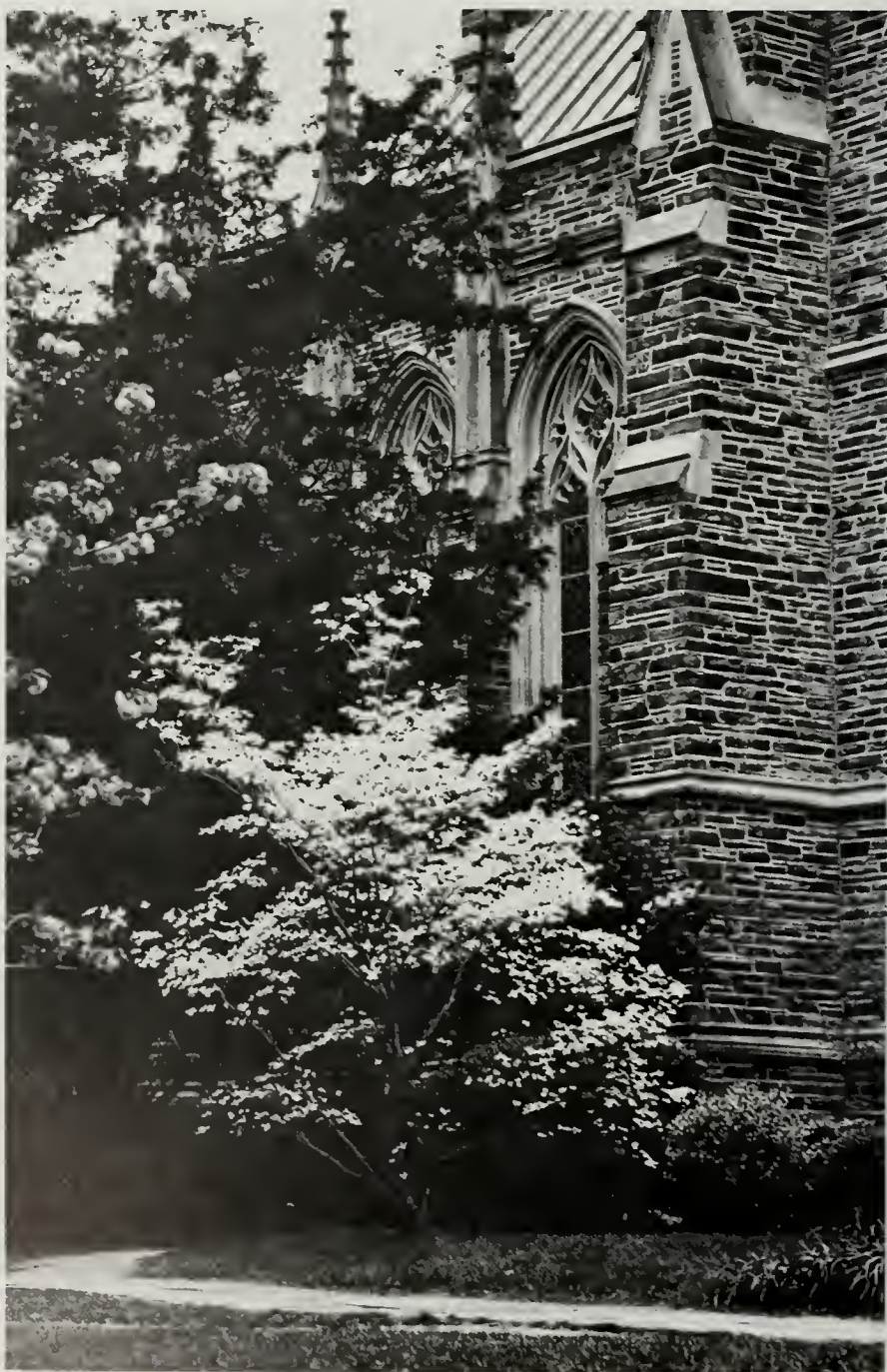








# The Distinction of Duke



## Mastering the Law

The business of the Law School is to provide a place where professors and students may join in the effort to explore and to master the discipline of law.

Many students come to law study with a limited perception of what they are about. Some suppose that law is a body of rules and that lawyers are people who know the rules. This is not wrong, but it is misleadingly incomplete. Legal rules are countless; many are subject to frequent change; they conflict; and their words often conceal more meaning than they reveal. Lawyers are people who understand and influence the ways in which elusive rules work in the minds of officials who must enforce them. Their discipline is thus more than a mass of data to be assimilated. It is an activity; and its mastery requires judgment and gift of expression as well as information.

Such mastery is rarely an achievement of passive learning. Much lonely effort is required. And full development requires substantial interaction with others. For most learners of law, the best school is the one that affords the best opportunity and inducement to participate in a prolonged conversation about the law with persons of wit, industry, and experience. The more intense the dialogue, the stronger is the mastery of the discipline.

One who seeks such interaction might wisely examine four qualities of a law school: the students, the faculty, the intellectual environment, and the program.

## The Duke Law Students

Each year, about 175 first-year law students are enrolled at Duke; the aim is to maintain a student body of 500. Duke students are among the most rigorously selected in the United States.

There are several quantified measures applied to law students as groups. The strength of Duke students is most favorably presented by the datum that about six out of seven students enrolled in the class of 1982 will have both high standardized test scores (LSAT scores over 650) and high academic records (GPAs over 3.50). Not more than three or four schools admit classes so deep in these qualifications.

Equally important, most Duke students bring other qualifications that assure their ability to contribute to the enterprise of mutual learning. About thirty members of the Class of 1982 are over twenty-five years of age. Many of these persons have recorded significant achievements in some activity outside the law. Others have attained graduate degrees in other disciplines. More have achieved particular distinction as undergraduates. Thus, there are accomplished writers, experienced performing artists, outstanding athletes, and others of unusual achievement.

Duke law students are unusually diverse in their backgrounds. The geographic distribution may be the broadest of any American law school. The number of undergraduate institutions represented in the student body is almost certainly the largest in proportion to size. As must be the case with such institutions, the great bulk of the students are from middle-class suburban families. But a few are from rural communities. Some are from inner-city neighborhoods. And the ethnic diversity is substantial. There is not and has never been a quota of any kind at Duke, but there is a continuing effort to achieve racial diversity in the mix of the student body. The Class of 1981 includes eight members of racial minorities, the Class of 1982 about twelve.

Diversity has been achieved with no substantial compromise on academic or intellectual qualifications. No one has been admitted to Duke who was regarded as a serious academic risk.

## **The Duke Law Faculty**

There are presently twenty-nine persons holding professorial appointments in law at Duke; all but seven of these hold academic tenure. They were selected after extensive search for the persons with the greatest capacity for legal discourse. Those holding tenure are persons who have proven themselves as excellent scholars who maintain positions of prominence in their fields. They are also expected to maintain excellence in the classroom. The full-time faculty are not expected to practice law; while minor consulting efforts are an appropriate method for maintaining contact with the profession, the professors are committed to scholarship, teaching, and public service. Most of the faculty have had substantial experience as lawyers, and not infrequently leaves are granted for the purpose of performing professional work elsewhere. Each year, several of the faculty are absent to teach elsewhere, to engage in research, or to assist in the administration of the University. But their places are filled with visiting faculty, and the visitors are often persons of unusual stature.

The professorial faculty is assisted in the presentation of the law curriculum by a number of persons who devote half or less of their time to the law school program. This adjunct faculty includes senior lecturers, lecturers, graduate fellows, and instructors in legal research. These persons are selected on the basis of the special contribution that each is able to make to the teaching program. They are selected from year to year in light of the needs of Duke students for particular kinds of instruction. A number of the adjunct faculty are legal practitioners; a few are scholars in law-related disciplines; some are in training for academic careers.

## **The Duke Environment**

The Law School is part of a university of relatively recent origin. Founded in 1924 with a single giant benefaction to a small college, Duke promptly took a place beside Stanford and Chicago among the newer elite of American universities. Most of its schools and departments are recognized as superior. The School of Medicine and its hospital are particularly noted. All of the University's endeavors are conducted on a moderate scale with respect to the numbers of students served. Less than ten thousand students are enrolled in the University.

The relatively small size of the Law School is an important attribute. There is very little anonymity at Duke. Students are close to the faculty and to one another. The resulting sense of community tends to ease competitive pressure. Law students everywhere are an aggressive lot, and some elite law schools can be infected with a spirit of destructive competition. This can seriously obstruct the process of mutual instruction, and can even cause passivity and alienation among many students. Inertia in the midst of frenzy is the unfortunate syndrome. The



phenomenon occurs less frequently in an institution that is conducted on a smaller, human scale, where friendships are more easily maintained. At such a school, it is more likely that competition amongst students will be stimulating and benign.

The sense of community within the Law School at Duke is enlarged by the fact that few of the students are involved with competing interests or relations in the area. Only one in eight of the students is a North Carolinian. Less than one in ten has previously attended Duke University. Relatively few are employed outside the University during the academic year. Most live, during the academic year, within a few minutes of the school. Thus, although the school does not maintain a residential facility for law students, there are at all times a substantial group of students working and talking in the building. The law building is not dramatic, but is designed to accommodate a fairly intimate and sociable learning habit.

The city in which Duke is located is a nineteenth-century tobacco mill town, the home of Bull Durham, Chesterfields, and Lucky Strikes. It is also now the location of a particularly prosperous black business community that includes the headquarters of a large insurance company. And it is part of a metropolitan area that includes Raleigh, the state capital, and Chapel Hill, the location of the University of North Carolina's main campus.

This metropolitan area does provide ample opportunity for recreation, but the attractions are not so numerous as to be a major source of distraction. It is no longer remote; there are frequent short flights to Washington. And its cultural isolation, a remnant of southern history, is rapidly diminishing. The center of the metropolitan area is now the Research Triangle Park, where over thirty substantial research laboratories are located, and where over twelve thousand scientists and engineers are employed. The high concentration of professional and scientific workers in the area has brought significant change. A symphony orchestra of quality is supported. In 1978, the American Dance Festival relocated in Durham. And the National Humanities Center opened; it is a center for collegial work by





humanist scholars. The environment is increasingly supportive of the kind of intellectual enterprise in which able law students are engaged.

## The Duke Program

The curriculum is distinctive in the degree to which students are drawn into formal dialogue with the faculty and with one another.

The most distinctive features are presented in the first year. Alone among elite law schools, Duke invests a proportionate share of its teaching resources to instruction of first-year students. All students are assigned to take one beginning course in a class of not more than twenty-five students; in these classes, a heavy emphasis is placed on student participation. Every member of the class is expected to participate in the discussion frequently.

In addition, each of the teachers of these courses conducts an adjunct tutorial program in legal research. Each member of the class is required to do a substantial amount of writing under faculty supervision. Student work is criticized and rewritten until a high standard of quality is achieved. The experience provided is not unlike that which is afforded at many schools only to those students who are elected to law reviews, where the students vigorously edit the work of one another.

The same small groups are also the assemblies used for the Senior Fellows, who provide another unusual feature. The Senior Fellows are distinguished lawyers who meet informally with the groups to share their experiences in the law. Each group holds four or five meetings for this purpose. Among the Senior Fellows scheduled for 1979-80 are a number of jurists and senior practitioners from across the continent.

The intended effect of these features of the first-year program is to involve students more deeply with one another and with the faculty in a shared intellectual enterprise. This effort is continued through the upperclass years in the seminar offerings.

A number of the advanced seminars are presented by the clinical method. Students are placed in professional roles and asked to perform the intellectual endeavors of lawyers. Their performances are criticized, often by practitioners who are actively engaged in the professional activity involved. Many of these clinical seminars require substantial writing. One, the seminar on trial practice, is largely forensic and involves heavy use of videotape to review and criticize student presentations.

Other seminars are directed at more purely theoretical topics. But these, too, are conducted in small groups of twenty-five or less, and generally require substantial writing. These offerings also serve to bring students into closer contact with one another and with the faculty in the common pursuit.

The substance of law study at Duke is otherwise largely the same as that presented elsewhere; all American law schools study the same general subject. First-year offerings are especially conventional.

There is but one course requirement that is imposed on upperclass students. In order to graduate, each must complete one course or seminar dealing in a significant way with ethical issues. The list of options varies from year to year. The requirement manifests the conviction of the faculty that the issues of professional conduct are more difficult and more important than some students may appreciate; in a curriculum that offers many attractions, such offerings risk neglect by the students who are least aware of the difficulties of ethical issues.

Also, the Duke law curriculum, like that of other fine schools, does offer a few features that reflect interests, traditions, or opportunities that are special if not unique. At Duke, a special effort is made to provide substantial advanced offerings in the corporate area and in particular areas of litigation. An effort is also made to

exploit the proximity to the medical school, so that there are several offerings in the health care area.

But despite these distinctive features of the Duke curriculum, the prospective applicant should note that larger schools with larger faculties are likely to present an even larger array of offerings. This is the one unavoidable adverse consequence of maintaining a smaller size. Students who are especially keen to have the widest possible selection of advanced courses would be wise to examine the catalogues of the largest schools. Whether the trade seems advantageous or not must necessarily depend in part on how highly the individual values the characteristics that Duke seeks to preserve by its smaller size. Especially for those who prefer anonymity, or who value the right to remain passive in the assimilation of learning provided by others, Duke is not likely to be the best choice. Nor is it likely to be best for those who wish to test themselves in an atmosphere of unrestrained academic competition.

## The Status of Duke

The impulse to achieve status is a very powerful force, perhaps especially in an open society such as ours. Law school applicants are not exempt from that impulse, and may even be especially animated by it, so closely is it related to professional goals.

One might be tempted to dismiss this preoccupation as unworthy. Those who make choices on the basis of a social or an academic pecking order may seem to care more about the appearance than the reality of what they do. Certainly, we should all take care not to mistake any academic credential, however lustrous, for wisdom or virtue. It is probably true that we pay more respect to such paste jewelry than it deserves.

Yet the consequences of institutional status are real. Status can be converted into money, power, and influence through the operation of the job market. In a sense, persons selecting a professional school do become members of a guild who share in some degree a common reputé and a common access to employment opportunities. The value of being certified by an elite law school can even be crudely measured by econometricians. Crude, even disconcerting, as they may be, these measurements do reflect real perceptions by an identifiable public.

According to social scientists who measure institutional status of law schools, it appears that Duke is presently assigned a rank not higher than ninth nor lower than thirteenth. Inasmuch as these are the only scientific data available on the subject of law school quality, the consumer might well be tempted to rely wholly on such rankings. One could do worse.

On the other hand, one who is bent on this approach might also wish to consider another factor that bears on the worth of one's academic credential and that may be considerably more consequential than the status of the institution. This is the academic record attained by the individual in question. Although academic records are very narrow measures of capacity and poor forecasts of the productivity of careers that lie ahead, they are taken seriously for a time by people who have no better basis for judgment. Thus, a distinguished graduate of an undistinguished school may have better first opportunities than would be open to the same person with an undistinguished record at a distinguished school. This is annually an occasion for sorrow by graduates of elite schools who are passed over in the initial job market for persons who failed to gain admission to equally prestigious schools. So the clear-eyed person exclusively concerned with "maximizing options" must balance institutional status against a prediction of his or her own academic attainment.

When the risk factor is taken into account, it seems imprudent to rely wholly on perceptions of institutional status as a basis for choice. Status is a legitimate and

relevant datum. But, as GNP does not reveal the quality of national life, so institutional status does not reveal the effective utility of a particular school for an individual student. Duke would prefer to attract its students on the basis of its personnel, program, and location, leaving the matter of status to take care of itself. No assurance can be made to any student that he or she will achieve higher status by reason of attendance at Duke.

Nevertheless, a few words may be addressed to the concern. In addition to the statistical measures of institutional fame, those less familiar with the institution are entitled to know that the alumni, though few in number, are widely distributed in important professional positions throughout the country. They hold important positions in the government and in the judiciary. Many are partners in major law firms, including firms in almost every large American city. A significant number are teaching law in other universities. The quality of the alumni group is attributable in part to the fact that Duke admission standards have always been high. Thus, placement of Duke graduates has never been a major institutional problem. This is not to say, of course, that most Duke students get precisely the jobs they want. No law school could make such an assertion. There is always some adjustment to be made by many students to match aspiration to opportunity. It should also be acknowledged that there may be a few communities in the United States that are sufficiently insular that penetration by all but the most distinguished Duke graduates is difficult; Boston is the one preeminent example. But even in such communities, small numbers of Duke law alumni can be found working and prospering. And, in contrast, there are some southern cities in which Duke law alumni play a truly dominant role.

## **Law at Duke and Professional Competence**

Another matter that may weigh in the minds of many prospective law students is the objective of achieving professional competence. Interest in this goal has been heightened in recent years by the number of expressions of doubt about the competence of lawyers that have come from persons highly placed in the profession. Some have suggested that law schools are doing less than they should to assure the competence of their graduates.

Because of the timeliness of the subject, it seems wise to point out that the professional competence of its graduates is not an assurance that Duke is prepared to make. Most Duke alumni are very competent, indeed, to perform their work. It is certainly expected that this will continue to be true. But there are several reasons why Duke cannot accept responsibility for the quality of the services ultimately delivered by its graduates. And it may be useful for prospective students to have in mind some of them.

One reason is that law students will as lawyers perform an enormous diversity of services. Merely defining general legal competence is a task beyond our present capacity; only if the work is more narrowly defined does the objective have meaning. Most students do not have sharply defined career objectives.

A second reason for diffidence is that the ingredients of competence, insofar as we understand them, include diverse personal traits that a university has but limited capacity to influence and no ability to control after graduation. Competence is, for the most part, a condition or a habit that lawyers must impose upon themselves.

Thirdly, it is true that much lawyer work is not of the sort that makes rigorous intellectual demands. The University seeks to maintain an environment in which questioning and speculation are the normal disposition. Such an institution is inefficient and ineffective when its energies are applied to the more confining tasks of technocracy that may be a part of many lawyers' work.

This is not to say that academic law training at Duke is unrelated to professional competence. The skills of reading, writing, speaking, listening, and





thinking are elevated by academic work in law, and they are the basic skills of lawyers. Thus, most of the Duke program of individual instruction is especially helpful in achieving professional competence.

Moreover, there is very little work of importance that is performed by lawyers that does not depend in part on an understanding of the law, which is the central object of academic study. While mastery of law as an intellectual discipline is not a guarantee of competence, it is certainly a major component. Indeed, it is true for the most challenging work performed by lawyers that highly theoretical study is the best preparation. Many professional tasks call for imagination, judgment, and wisdom; these are traits that are associated with the pursuit of law as an intellectual discipline. Development of such traits is, to be sure, an enterprise to be extended over the whole of a career and is not the end of university law training. The office of academic law study is to open minds to the range of possibilities that may be pursued by those who aspire to still deeper understanding and stronger mastery of the subject.

It may be that the most important effects of a Duke law education on lawyer competence are not immediately aimed at job performance. Thus, among the tasks that the faculty sets for itself is to enable students to perceive law as a humanist discipline, demanding in its intricacy, but incorporating at times the whole range of human experience. What students bring to law study in understanding history, philosophy, literature, anthropology, and a dozen other disciplines is truly relevant and ought not to be left at the portals of courtrooms and law offices. The lawyer who retains a generous sense of relevance is more likely to grow in wisdom and judgment over the longer term of his or her career.

Moreover, competence seems to be closely associated with the pride and self-esteem of individual professionals. It is no small source of pride if law students can know that they have met some of the most intractable problems that men and women can meet, and have yet performed with credit.

Finally, competence seems also to be associated with professional integrity because it depends on a willingness to perform even when rewards are postponed, or unpromised. One feature of law that is fully revealed only to those who have pursued it rigorously is that even at its worst, when the law is stupid or cruel, it



retains a tendency to improve itself. If thus seen to reflect a heartening idealism, it provides a comfort to the lonely practitioner in those moments when he or she is tempted to forsake craftsmanship, to overreach or neglect a client.

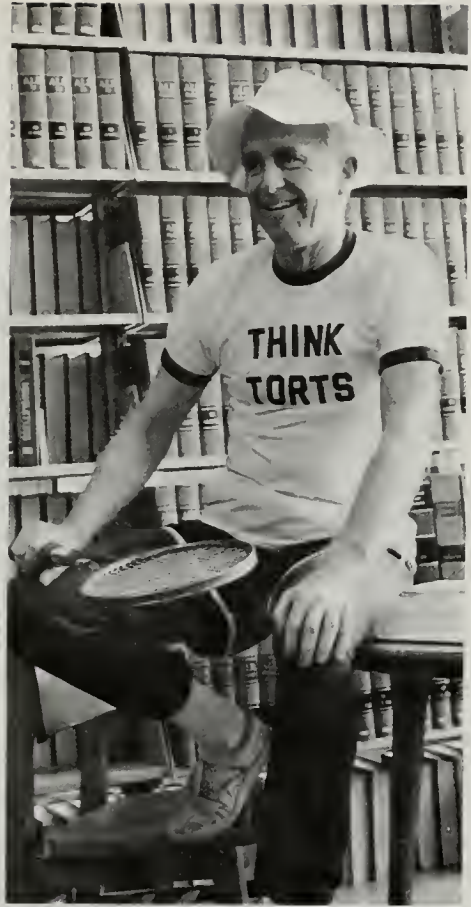
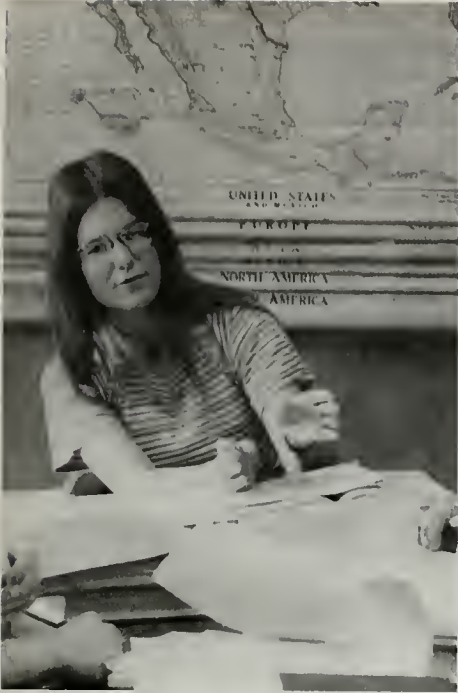
In these ways, the kind of experience that Duke seeks to provide is preparation more for a career than for a job.

## Conclusion

Duke does not expect law students to come with well-defined career goals. It does expect that they will bring a respect for the academic enterprise and a curiosity about the institutions and values of law. It also expects that those who leave will share a commitment to the craft of law, and a spirit that will help them bear important responsibilities through all of their productive years, with credit to themselves and to one another. The contribution that Duke hopes to make is to provide an environment in which such shared commitments can germinate and flourish.

### Policy of Nondiscrimination

Duke University does not discriminate on the basis of age, race, color, national and ethnic origin, sex, or handicap, in the administration of educational policies, admission policies, financial aid, employment, or any other University program or activity. Inquiries concerning the University's responsibility may be directed to the Director of Equal Opportunity.



# Program Information



## **Juris Doctor Degree**

Upon favorable recommendation of the faculty, the degree of Doctor of Law (J.D.) will be conferred upon students who have successfully completed six semesters of law study in residence at Duke. Two semesters of law study undertaken at another accredited American law school may be counted toward the required total if the final two semesters (exclusive of a summer session) and a minimum of fifty-six semester hours of law study are undertaken at Duke. Students are not permitted to accelerate graduation by attending summer school.

Students shall be deemed successfully to have completed six semesters of law study if, during a minimum of ninety academic weeks, they have satisfied the following requirements:

1. a passing grade in courses aggregating eighty-six semester hours;
2. a grade not requiring repetition in every required course; and
3. a grade-point average of at least 1.80 on a 4.0 scale and good standing under the rules defining probationary status (see section on Eligibility to Continue Law Study).

## **Bachelor of Laws Degree**

Upon favorable recommendation of the faculty, the degree of Bachelor of Laws (LL.B.) will be conferred upon students who have satisfied all of the requirements listed above as necessary for the Doctor of Law degree but who do not possess a baccalaureate degree prior to completion of the program of study for the Doctor of Law degree.

## **Joint Degrees**

**Combined Doctor of Medicine-Law Degree.** The School of Law and the School of Medicine of Duke University jointly sponsor a program of combined legal and medical education. The program provides an opportunity to acquire a full basic study of the two fields. Upon satisfactory completion of the required course of study, candidates will be awarded both the J.D. and M.D. degrees.

The student in the M.D.-J.D. program begins a six-year course of study in the School of Medicine. As in the regular M.D. program, the first year is devoted to the basic medical sciences and the second year to the basic clinical disciplines. At this point, the student usually enters the Law School, where the first-year curriculum is the same as that of other law students. During the next two years, the student



may select courses in the Law School that are of special application to medical-legal interests. The sixth and final year is spent in elective clinical work in the Medical School tailored to the student's specialized needs. In addition, the student completes eighteen semester-hours, or two summer sessions, of elective basic science work.

**Combined Master of Business Administration-Law Degree.** The School of Law and the Graduate School of Business Administration of Duke University have established a combined program of studies in law and graduate level business administration. The aim of the program is to provide a small number of selected individuals with the opportunity to acquire an education in both law and business administration in a four-year course of closely integrated study in the two fields. Upon satisfactory completion of the required course of study, candidates will be awarded both the M.B.A. and the J.D. degrees.

The student in the M.B.A.-J.D. program begins the first-year course of study in either the Graduate School of Business Administration or the School of Law. If the student begins in the Law School, the first-year curriculum is the same as that of other law students; if the student begins in the Graduate School of Business Administration, the first-year curriculum is the same as that of other graduate business students. The student's second year consists of the full first-year program of the other school. In the third and fourth years of the program, the student takes a mix of courses in both schools.

**Master of Arts in Public Policy Sciences-Law Degree.** The School of Law and the Institute of Policy Sciences of Duke University have established a combined program of studies in law and graduate level policy sciences. The aim of the program is to provide an opportunity for students to acquire decision-making skills and substantive policy knowledge that would be useful in either career or citizen roles dealing with problems of the public sector. Upon satisfactory completion of the required course of study, candidates will be awarded both the M.P.P.S. and the J.D. degrees.

The combined program requires completion of four academic years and one summer internship, of which the first academic year is spent exclusively in the Law School; the second exclusively in the Institute of Policy Sciences; and the third and fourth years in both schools, but mainly in the Law School. In addition, the student must select a substantive policy area in which to concentrate from among the fields of the administration of justice, communications policy, health policy, and educational policy.

**Combined Master of Health Administration-Law Degree.** The School of Law and the Department of Health Administration have established a combined program of studies in law and health administration. The aim of the program is to provide interested persons with the opportunity to acquire an education in both law and health administration in an integrated four-year course of study in the two fields. Upon satisfactory completion of the required course of study, candidates will be awarded both the M.H.A. and the J.D. degrees.

The student in the M.H.A.-J.D. program, after completing the first three semesters (twelve months) of the basic M.H.A. program, enters the Law School, where the first-year curriculum is the same as that of other law students. During the third and fourth years, the student continues in the Law School, completing requirements for the law degree, including two electives approved by the Department of Health Administration, and takes ten more semester-hours of M.H.A. course work. In the Law School, the student is encouraged to emphasize courses relating to public law and administration. Opportunities for special activities in health law will be made available to the student by the Department of Health Administration over the course of the program.

## Graduate Study in Law

The law faculty has the authority to recommend that the University confer three separate graduate degrees: the degree of Master of Laws (LL.M.), the degree of Master of Comparative Law (M.C.L.), and the degree of Doctor of Juridical Science (S.J.D.). The number of candidates accepted for study in any of these degree programs is extremely limited. No systematic or formal program of graduate instruction exists at the Duke Law School. An applicant will be accepted for graduate study only if a faculty member indicates willingness to supervise the work of the student, if the student does not require financial assistance, and if the student has achieved a superior academic record in his or her undergraduate law studies. The course load, the program of instruction, and all other requirements for the degree will be determined by the Dean and the involved faculty members, subject to the approval of the entire faculty. Any candidate interested in obtaining one of the three graduate degrees of law at Duke should have formulated a specific research project prior to applying.

# Admissions



## General Information

The admissions process for the typical law school applicant is at best time-consuming and lengthy. It occasionally creates severe anxiety. The Admissions Committee is aware of the difficulties and uncertainties faced by applicants. Consequently, it is our goal to treat each applicant with fairness and candor. The following description of the admissions process at Duke is presented with that object in mind.

The Admissions Committee receives its authority by delegation from the law faculty and reports to the law faculty. The committee, composed of four law professors and three law students, decides policy questions arising in the admissions process. Student members of the committee, however, do not review individual files. All individual applications are reviewed by the Assistant Dean.

## Admissions Standards

At Duke, as at many law schools, the three most important admissions criteria, in the order of their importance, are the Law School Admission Test (LSAT) score, the undergraduate grade point average (GPA), and the undergraduate institution attended. Every two years validity studies are conducted by the Educational Testing Service to review the predictive value of these criteria at Duke Law School. More specific statistical studies concerning a variety of admissions topics are conducted periodically in the admissions office at Duke.

Although reliance on purely academic criteria is appropriate in making some decisions, particularly those involving candidates either clearly admissible or clearly inadmissible, the majority of applications fall between these extremes. For these applications, Duke will give careful consideration to more subjective factors such as proven capacity for leadership, dedication to community service, excellence in a particular field, motivation, graduate study in another discipline, work experience, extracurricular activities, and personal and character information provided in letters of recommendation. Also, in interpreting the applicant's GPA, it is often necessary to make judgments regarding the strength of the course of study pursued and the significance of class rank or the progression of grades.

Although no quotas of any kind are employed in the admissions process, the Law School does make a conscious effort to achieve a broad diversity in each entering class in terms of general background, geography, and undergraduate institutions represented. An individual student may be selected not only for his or her marked potential for academic success, but also because application materials indicate that he or she can bring to Duke unique personal qualities or talents that will enhance the overall character of the entering class.



Duke has a faculty-initiated affirmative action plan for minority admissions, and special care is taken in evaluating applications from members of minority groups who traditionally have not been well represented in the legal profession. On occasion, special consideration is given to children of alumni of Duke University who are qualified to do acceptable work. Female applicants are evaluated according to the same standards as male applicants, and applications from women are encouraged.

An applicant who has been graduated from an accredited college, or one who will have been graduated from an accredited college during his or her course of study at the Law School, may be admitted as a candidate for the degree of Doctor of Law (J.D.). An applicant who has completed three-fourths of the coursework required for graduation from an accredited college and whose academic record has been of outstandingly superior quality may be admitted as a candidate for the degree of Bachelor of Laws (LL.B.).

An applicant who has complied with the requirements for admission to candidacy for the J.D. or LL.B. degrees, who has satisfactorily completed one year of study at any law school that is a member of the Association of American Law Schools, and who is eligible to continue study at that law school may be admitted with advanced standing. Provisional credit will be given for course work previously completed, with final credit contingent on satisfactory completion of at least two years of study at Duke.

For both more detailed and more general information on law school admission, prospective applicants are advised to consult the most current issue of the *Prelaw Handbook*, published annually in October by the Law School Admission Council and the Association of American Law Schools. It includes material on the law and lawyers, the study of law, prelaw preparation, applying to law school, and a complete Law School Admission Test, together with individual information on most American law schools. The *Prelaw Handbook* may be obtained at college bookstores or ordered from the Educational Testing Service, Box 944, Princeton, New Jersey 08540.

## Admission Procedures

Application must be made on the prescribed Law School forms, which are available upon request. A nonrefundable fee of \$25 is charged for processing an application, and a check or money order for this amount should accompany the application. This application fee is not waivable except in cases of extreme personal hardship. No applicant will be accepted until all required documents are on file. These documents are:

1. The application itself, to which a recent photograph must be attached.
2. Transcripts of all college and graduate academic records submitted through the Law School Data Assembly Service (LSDAS), Educational Testing Service, Box 944, Princeton, New Jersey 08540.
3. A report of the applicant's score on the Law School Admission Test (LSAT) administered by the Educational Testing Service. The LSAT is given periodically at examination centers conveniently located throughout the United States and at special foreign centers. Testing dates in the summer and fall of the applicant's final year of undergraduate study are strongly preferred. LSAT scores that are no more than four years old will be considered valid. Application forms and information should be procured by writing directly to Law School Admission Test, Educational Testing Service, Box 944, Princeton, New Jersey 08540.
4. Two completed reference forms, one of which should be written by an appropriate academic Dean at the undergraduate school last attended. A statement of the applicant's rank in class will be helpful. It is suggested

that the other reference form be submitted by an instructor who has personal knowledge of the academic performance and potential of the applicant. References should be requested to return their forms directly to the Admissions Office, Duke University School of Law, Durham, North Carolina 27706.

Ordinarily, the Law School conditionally accepts or rejects an applicant on the basis of a transcript showing college work through the junior year. Final action is taken in the light of further supplemental transcripts showing all of the college work required for admission to the Law School. A conditionally accepted applicant has been rejected later on the basis of the completed transcript in only a few cases in the history of the Law School. Personal interviews are not required. However, a visit to the Law School and an interview will be arranged if requested by the applicant.

Duke has no formal deadline for the submission of applications. However, it is strongly recommended that applications be filed between 1 September and 1 December. The class is normally filled by persons whose applications are completed before 15 February. If the admissions application has been completed before 1 December, the applicant ordinarily will receive an answer from the admissions office no later than 15 March. Notification of action on applications completed after 1 December, or deferred from the first decision period, will usually be received about 15 May. Only in rare cases will offers be extended prior to 1 February or after 15 May.

Each applicant extended an offer of admission will be given at least three calendar weeks to respond. No applicant who receives an offer of admission will be required to make a final decision on the offer prior to 1 April. After 15 May, a waiting list is normally established and held open until a few days prior to fall semester registration. Offers are extended to applicants on the waiting list only as withdrawals occur.

A deposit fee of \$100 must be paid at the time the applicant accepts an offer of admission. This deposit fee is nonrefundable and will be applied to the tuition charge for the first semester of law study.

## **Reactivating Admissions Files**

If an applicant has applied for admission in a previous year and was not extended an offer of admission or chose not to enter during that academic year, he or she may request that the file be reactivated for consideration by the Admissions Committee. A nonrefundable fee of \$25 is charged for processing the application, and a check or money order for this amount must accompany the request for reactivation of the file. The applicant must also reregister with the Law School Data Assembly Service (LSDAS), Educational Testing Service, Box 944, Princeton, New Jersey 08540.

## **Pass-Fail Transcripts**

A special word of caution should be extended to applicants concerning undergraduate pass-fail courses. The Admissions Committee has had occasion in recent years to consider transcripts consisting of predominantly pass-fail grades. Only a minute percentage of those considered were admitted. It is fair to state that a student's chances of admission are inversely proportional to the percentage of such grades appearing on the transcript, as least insofar as the pass grades reflect the personal choice of the applicant not to be graded.

# Financial Information



## Tuition

The cost of providing a legal education of the quality offered by the Duke Law School is high and has been steadily increasing. Tuition provides only a part of the funds necessary, with the remainder provided by income from endowment, grants, and gift support of alumni and friends.

Tuition at Duke is due and payable not later than the day of registration for a particular semester. For the academic year 1979-80, tuition will be \$4,230 (\$2,115 per semester). In addition, a compulsory student health fee in the amount of \$57.50 per semester will be charged. Incoming students should be aware that tuition will probably rise annually during their course of study.

**Tuition Refund Policy.** Tuition refunds are governed by the following policy:

1. In the event of death or a call to active duty in the armed services, a full tuition refund is granted.
2. In all other cases of withdrawal, students or their parents may elect to have tuition charges refunded or carried forward as a credit for later study according to the following schedule:
  - a. withdrawal before the beginning of classes—full refund;
  - b. withdrawal during the first or second week—80 percent;
  - c. withdrawal during the third through fifth week—60 percent;
  - d. withdrawal during the sixth week—20 percent;
  - e. withdrawal after the sixth week—no refund; but
  - f. tuition charges paid from grants or loans will be restored to those funds and not be refunded or carried forward.

## Other Fees

**Late Registration/Late Payment Fee.** Students who register in any semester or pay their fees at a date later than that prescribed are required to pay to the Office of the Bursar a \$25 penalty for late registration or late payment of fees.

**Student Health Fee.** A student health fee of \$115 (\$57.50 per semester) is charged to all Duke University students.

**Athletic Events Fee.** Law students may secure admission to all regularly scheduled University athletic contests held on University grounds during the entire academic year by payment of the athletic fee of \$25 per year plus tax. This fee is payable in the fall semester. Students may also use the facilities of the Duke golf course upon payment of student green fees.



**Duke Bar Association Fee.** A \$10 fee each semester is due and payable not later than the day of registration for a particular semester. This fee is utilized exclusively to support the activities of the student bar association.

## General Expenses

Applicants should be aware that the following general expense estimates were compiled in the spring of 1979, and appropriate revisions may be necessary to reflect inflationary increases. It should also be recognized that the expenses of a Duke law student may vary considerably according to the style of living assumed, travel distance, and size of family, if any. With the above cautionary statements in mind, the following are the best estimates as to total living costs for a nine-month academic year: \$7,500–\$8,500 for single students; \$9,500–\$10,500 for married students; and \$11,500–\$12,500 for married students with one child. Included in the above cost-of-living estimates are current expense levels for tuition, lodging, board, books (\$225–\$300 if purchased new), supplies, transportation, and personal effects. Applicants for loans and scholarships should expect that their proposed budget figures will be examined carefully with the expectation that these figures will fall in the lower ranges of the above-estimated expenses.

## Debts

No records are released and no student is considered by the faculty as a candidate for graduation until all indebtedness to the University is settled with the Bursar.



## Scholarship Assistance

Professional education is expensive. Unfortunately, the Law School must rely upon students to bear the primary burden of this cost, with such help as they may receive from families, governments, or other organizations.

**Merit Awards.** The Law School does provide a number of substantial scholarships to entering students. While financial circumstance is a factor in awarding some of these scholarships, the primary purpose of these awards is to assure the quality of the entering class. Students receiving such awards are generally those who reasonably can be expected to make significant contributions to the community, by reason of their exceptional academic promise, extraordinary achievements, and valuable experience or background. Typically, scholarships of this type are divided into five equal payments, each to be made at the beginning of each of the first five semesters of law study. Thus, somewhat more assistance is given at the beginning of the student's academic career, and less later, as the student can be expected to achieve greater financial independence.

These scholarships are funded from five sources:

*William Neal Reynolds Scholarships* were established by the Z. Smith Reynolds Foundation in honor of the brother of R. J. Reynolds, the founder of the tobacco company.

*Bunyon S. Womble Scholarships* were established by the Womble family in honor of the founder of a North Carolina law firm.

*James A. Bell Scholarships* were established by the Bell family in honor of a federal judge.

*Elvin R. Latty Scholarships* were established by alumni and friends in honor of a former Dean of the Law School.

*Denspaugh-Dalton Foundation Scholarships* were established by a Miami foundation.

**Need Awards.** The Law School also provides a number of smaller scholarships that are intended primarily to aid those students who are most in need of financial assistance. In order to qualify for assistance of this kind, students must make application through the Graduate and Professional School Financial Aid Service, Box 2614, Princeton, New Jersey 08540.

Students applying for this kind of assistance must also present verified income tax returns for the previous year for themselves and for their parents. The Law School fully recognizes that many students are independent of their families for all purposes, but in choosing among competing student needs, those that cannot be met by parents will be accorded priority.

These scholarships are funded from five sources:

*Neil Blue Memorial Scholarships* were established in memory of a law student who suffered a tragic death in 1971.

*Jenny Ferrara Scholarships* were established by Vincent L. Sgrosso, of the Class of 1962, in honor of his grandmother.

*John R. Parkinson Scholarships* were established by the Parkinson family.

*David H. Siegel Scholarships* were established by Allen G. Siegel, of the Class of 1960, in memory of his father.

*University Scholarships* were established by the University from general endowment funds.

**Second-Year Awards.** A few scholarships are also awarded each year to second-year students who have distinguished records in law school and who demonstrate substantial need that cannot be met from other sources.

These scholarships are funded from two sources:

*Beard-Rees Scholarships* were established to honor the memory of two members of the Class of 1964, Robert L. Beard and David W. Rees.

*Richard M. Nixon Scholarships* were established by the Class of 1937 to honor their classmate, the former President of the United States.

Students seeking aid on account of need should file a financial aid application at the same time they apply for admission. An attempt will be made simultaneously to inform all such applicants of both the admissions and scholarship decisions, although some decisions concerning scholarships will be made at a later time. The fact that a student has applied for financial aid will not affect the decision on the application for admission.

Need grants are renewable for second- and third-year students as long as they are eligible to continue law study.

## Loan Assistance

Students who need loan funds to help finance their legal education will be considered for such assistance after admission and scholarship decisions have been made. Therefore, when applicants receive an offer of admission they will know the amount and kind of financial assistance available. The appropriate loan application will be sent to the student when the student confirms his or her place in the entering class and accepts the financial aid offer. In no event should loan applications be filed later than 1 June prior to the beginning of the fall semester and 15 November prior to the beginning of the spring semester.

In addition to filing the Duke financial aid form, applicants for all loans administered or certified by Duke University are required both to submit copies of their income tax returns (Form 1040) and those of their parents and to participate in the Graduate and Professional School Financial Aid Service (GAPSFAS). Information and application material for GAPSFAS can be obtained by writing Educational Testing Service, Box 944, Princeton, New Jersey 08540.

The following loan sources are either administered by Duke University or are available to Duke law students. Approval of any loan application is based on financial need and satisfactory scholastic standing.





**National Direct Student Loan Program Loans.** Loans are available to Duke law students through the student loan program established under the National Direct Student Loan (NDSL) Program, assuming the continuation of appropriations by the Congress for this purpose. Interest on these loans, at a rate of 3 percent, begins to accrue nine months—and repayment usually begins ten months—after the student leaves the Law School, with complete repayment scheduled over a period of up to ten years. Duke administers all NDSL loan funds allocated to it under strict federal guidelines dealing with such issues as the amount of parental income, reasonableness of budgets, complete disclosure of assets, and emancipation within the meaning of the applicable federal regulations.

**Federally Insured Student Loan Program.** Duke University's total allocation of FISL funds will not permit the Law School to administer these on a non-need basis. The program allows a student with demonstrated need according to the GAPSFA report to borrow up to \$5,000 per year at a 7 percent interest rate. Interest on these loans will be paid by the government while the student is in school. A student will have a maximum of ten years following graduation or withdrawal from the University to repay the loan.

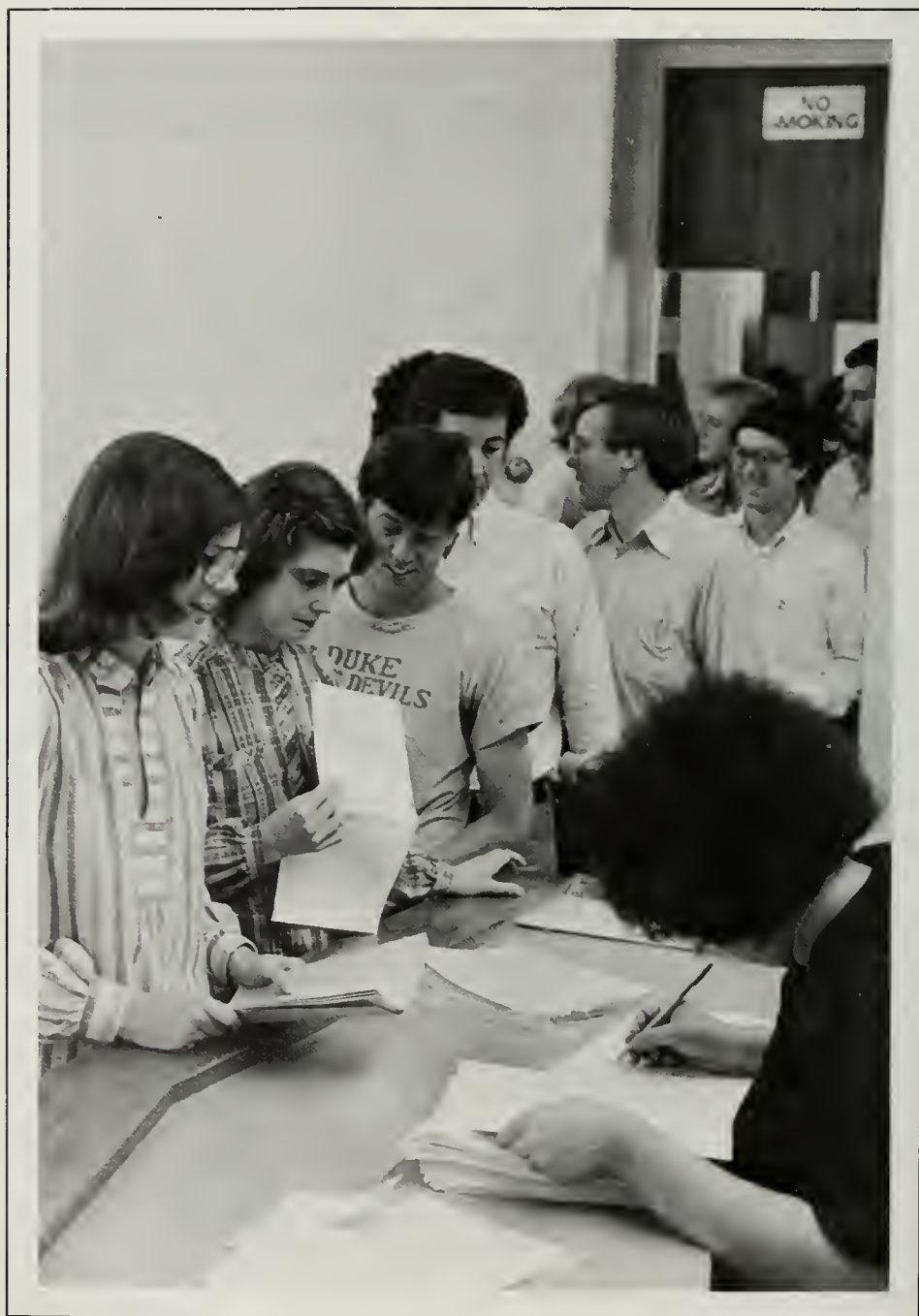
**University Loans.** Some limited financial assistance is also available in the form of loans held in trust by the University to qualified law students. Interest on these loans, which mature after the student has left the Law School, accrues from the date of each note at the rate of 1 percent while the student is still in school and at a rate of 3 percent thereafter for the next five years, over which repayments are scheduled.

**Dean's Emergency Loans.** Alumni gifts have created a special Dean's discretionary fund. In cases of immediate exceptional need, small non-interest-bearing loans are available for short periods to cover temporary financial emergencies.

**State Guaranteed Loans.** Most states have established guaranteed loan programs for graduate and undergraduate study for their own residents. The terms of such loans, the methods of administration, and the availability of funds vary widely among the various states. The Law School will supply information regarding the appropriate agencies to contact in each state and will also make appropriate certifications in support of the loan applications of individual students applying for state guaranteed loans.



# Scholastic Standards and Rules



# Grading

The Law School utilizes a numerical system of grading based on a 4.0 scale with letter-grade equivalents. Although grade distribution will vary from course to course, the normal distribution in an average class with a large enrollment (over forty students) will approximate the following:

Numerical Grade	Letter Grade	Percentage
3.5-4.0	H (Honors)	10-15
2.7-3.4	HP (High Pass)	35-40
1.8-2.6	P (Pass)	40-50
1.3-1.7	LP (Low Pass)	
1.0-1.2	F (Fail)	0-10

# Ungraded Course Work

Although the student's work in most courses is evaluated under the grading system described above, there are some course offerings available on a credit/no credit/fail basis. These include the following:

1. courses so designated credit/no credit/fail by faculty action;
2. courses previously audited in whole or in part;
3. independent study;
4. ad hoc research seminar programs;
5. courses taken in other divisions of the University;
6. courses taken in other law schools;
7. courses in which the student was previously enrolled for not less than eight calendar weeks; and
8. courses in which the student has taken a special final examination or submitted a special paper.

A failing performance will be treated as such and the student will receive a grade of *fail*. Such a grade is considered a failure for the purpose of determining whether a student has failed more than the number of semester-hours permitted for continuation and is averaged as a grade of 1.2 in computing the student's average. It is not counted for purposes of the eighty-six semester-hour requirement for graduation, but is counted for the purpose of computing residence credits.

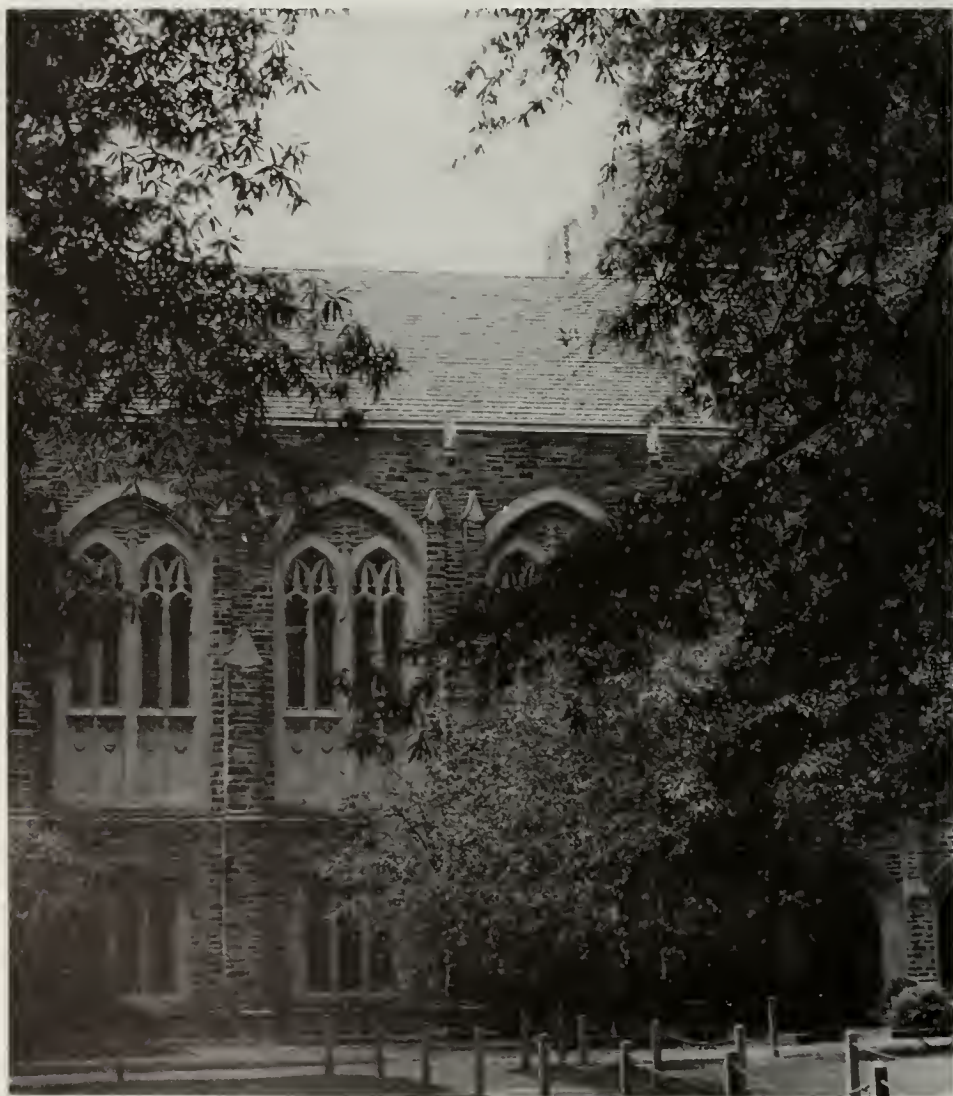
# Courses in Other Divisions of the University

Second- and third-year students may take courses offered in other divisions of the University upon the condition that the student is engaged simultaneously in

at least ten semester-hours of courses in the Law School. Credit (limited to a total of six semester-hours) toward the J.D. degree will be granted for those courses of suitable academic rigor that, in the judgment of the Dean, are related to the student's education in the law. A written request for permission to enroll in a University course outside the Law School must be presented to the Dean. A grade of *P* (or its equivalent) or better will be recorded as *credit*. Grades that are lower than *P* but higher than *F* (or their equivalents) will be recorded as *no credit*. Failing grades will be recorded as *fail* and assigned a numerical equivalent of 1.2 in computing the student's average.

## Courses in Summer Schools

Students who wish to attend summer sessions at other law schools must submit a written request to the Dean for permission to do so. The request should state the name of the school and the courses to be taken. A grade of *P* (or its equivalent) or better will be recorded as *credit*. Grades that are lower than *P* but



higher than *F* (or their equivalents) will be recorded as *no credit*. Failing grades will be recorded as a *fail* and assigned a numerical equivalent of 1.2 in computing the student's average.

## Independent Research

Law students in their second and third year of the J.D. or LL.B. programs may undertake up to four semester-hours of independent research in any academic year if the research is approved by a faculty member. Research will be graded on a credit/fail basis. Students undertaking independent research will meet regularly with the faculty member supervising the research in order to ensure contemporaneous discussion, review, and evaluation of the research experience.

## Ad Hoc Seminars

A group of five or more students may plan and conduct their own research and seminar program for not more than two semester-hours of credit (which shall be considered to be independent research within the meaning of the maximum limitation of four semester-hours of independent research each year). A request to establish such an ad hoc seminar should be addressed to the Dean at least two months before the end of the semester preceding the semester in which the seminar is proposed and contain an outline of coverage and required readings. The Dean will request a member of the faculty to evaluate the program and recommend whether the proposed program has academic merit. If approved by the Dean, a faculty member will be requested to evaluate the contribution of each participant before awarding credit. A written paper of the kind generally submitted in seminars will be required of each participant. Such seminar work shall be graded on a credit/fail basis.

## Minimum and Maximum Course Loads

No student is permitted to take fewer than twelve semester-hours per semester without permission of the Dean. No first-year student may take courses other than those constituting the required first-year program without permission of the Dean. Second- and third-year students are not permitted to take for credit more than sixteen semester-hours per semester, nor may they audit and take for credit more than seventeen semester-hours per semester without permission of the Dean. Students will not receive full residence credit if they take for credit fewer than ten semester-hours per semester.

## Examinations and the Submission of Research Papers

Unless the instructor announces before the end of the second week of the semester that another technique for evaluating student performance will or may be used, a written final examination shall be given at the conclusion of every course. An instructor may require an examination in a seminar if this intention is announced before the end of the second week of the semester.

No student may enroll in any course in which a research paper has previously been submitted or the final examination taken except a student who has failed the course and is required by the instructor to retake it or who obtains permission of the faculty to do so. The grade received in the second enrollment in the course will be substituted for the first grade received, except that the highest grade for which a student shall be eligible on a retaking of a course is a grade of 2.2.

Except with the joint permission of the Dean and the instructor involved, no credit will be given for any research paper submitted in partial or full completion



of the requirements of a course in which a student is enrolled unless the paper is submitted on or before the last day of the examination period.

Except with the joint permission of the Dean and the instructor involved, no credit shall be received for any examination taken in partial or full completion of the requirements of a course in which a student is enrolled unless the examination is taken at the time it is regularly scheduled. Such permission shall be granted only in the case of sickness, extreme personal hardship, or a conflict in the scheduling of two or more examinations.

An instructor may deny a student the right to take an examination in a course and may enter a failing grade for excessive absences or gross unpreparedness.

## Submission of Grades

All grades for all courses and seminars shall be submitted by instructors on or before the twenty-eighth calendar day following the last day of the regularly scheduled examination period.

When a student is granted an authorized extension for completion of required course work, the instructor shall, in lieu of a grade, enter the designation "incomplete." Except where an extension is specifically granted for a longer period, a designation of "incomplete" shall automatically be changed to a grade of 1.0 after thirty days or the beginning of the student's last semester in residence at the Law School, whichever is earlier.

## Eligibility to Continue Law Study

**Good Standing.** Any student who is eligible to continue the study of law and who is not on probation is in good standing.

**Probation.** Any first-year student with a cumulative grade-point average between 1.7 and 2.0 and whose failure grades, if any, total not more than eight semester-hours shall be placed on probation for the next two semesters.

Any student who in the second year received failure grades in courses totaling six or more semester-hours (but less than a total of ten hours during the second year), or who achieves a grade-point average of less than 2.0 in either semester of the second year, shall be placed on probation for the next two semesters. Any student who receives a grade-point average of less than 2.0 in the fifth semester shall be placed on probation for the sixth semester. Any student in the third year who receives failure grades in courses totaling six or more semester-hours (but less than a total of ten semester-hours during the two-year period) or who achieves a grade-point average of less than 2.0 in the third year, will be required to return for a seventh semester unless the student is relieved of the requirement by the faculty on the basis of a showing of adequate excuse for the third-year performance.

Every student on probation shall be subject to the special supervision of the Dean for the probationary period. The Dean may designate courses to be taken by the student and may require that they be taken on a graded basis. A student on probation shall be ineligible to continue the study of law at this institution if, at the end of the probationary period, the cumulative grade-point average for all work undertaken at the Law School is not 1.8 or higher.

**Repetition of First Year.** Any first-year student with a cumulative grade-point average of less than 1.7 but not less than 1.6 and who has received failure grades in courses totaling not more than eight semester-hours shall be permitted to repeat the first year. At the option of the student, upper-class courses may be substituted for first-year courses in which a grade of 2.0 or higher was achieved. A student repeating the first year shall be eligible to continue the study of law only if a grade-point average of not less than 1.8 is achieved for that year. Any student

repeating the first year under this rule who achieves a grade-point average of 1.8 or higher, but less than 2.0, or achieves a grade-point average greater than 2.0 but receives a failure grade in one or more courses, shall be placed on probation and is subject to the provisions of the preceding paragraph.

If the student elects not to repeat the year, an opportunity to withdraw voluntarily from the Law School shall be given. The student who does not do so shall be declared ineligible to continue the study of law.

**Ineligibility to Continue.** Any first-year student with a cumulative grade-point average of less than 1.6 or who has failed courses totaling more than eight semester-hours of credit shall be ineligible to continue the study of law at Duke. Any student who fails a total of more than ten semester-hours of credit over the course of the second and third years or whose grade-point average for the second year is less than 1.7 shall be ineligible to continue the study of law.

**Notification of Unsatisfactory Scholastic Standing.** The Dean shall inform students who are not in good standing of their status, the requirements that must be met to continue to be eligible for the study of law at the Law School, and the requirements that must be satisfied to be eligible for graduation.



# Curriculum



## Degree Program

The curriculum at Duke Law School is not fixed and static. All courses are subject to constant evaluation, and the organization of the curriculum itself is subject to critical examination each year by the faculty. The curriculum for the academic year 1979-80 is set forth below.

## First-Year Curriculum

The following first-year courses are required of all J.D. and LL.B. candidates:

Courses	Fall		Spring
Civil Procedure	3	and	3
Constitutional Law	3	and	2
Contracts	3	and	2
Criminal Law	3		
Property			4
Torts	2	and	3
Tutorial in Research and Writing	1	and	1
	15		15

Each first-year course will be divided into a combination of large, medium, and/or small sections. Each first-year student will be assigned in one of his or her courses to a small section, normally numbering not more than twenty-five, and in the balance of his or her courses to medium or large sections. The tutorial program is offered in conjunction with the small sections of the first-year courses.

### FIRST-YEAR COURSES

**110. Civil Procedure.** A consideration of the basic problems of civil procedure designed to acquaint students with the fundamental stages and techniques of litigation—e.g., pleading, discovery, trial, appeal, judgments, and multiparty actions—and to introduce them to underlying problems such as jurisdiction, choice of law in a federal system, and the roles of courts as law-making institutions. 3 s.h. fall and 3 s.h. spring. *Carrington, Paschal, and Schroeder*

**120. Constitutional Law.** An examination of the distribution of and limitations upon governmental authority under the Constitution of the United States. Included are study of the doctrine of judicial review of legislative and executive action, the powers of Congress and the President, the limitations on state governmental powers resulting from the existence or exercise of congressional power, and judicial protection against the exercise of governmental power in



violation of rights, liberties, privileges, or immunities conferred by the Constitution. 3 s.h. fall and 2 s.h. spring. *Dellinger and Van Alstyne*

**130. Contracts.** The formation and legal operations of contracts, their assignment, their significance to third parties, and their relationship to restitution and commercial law developments; the variety, scope, and limitations on remedies; and the policies, jurisprudence, and historical development of promissory liability. 3 s.h. fall and 2 s.h. spring. *DeMott, Pratt, and Weistart*

**140. Criminal Law.** An introductory study of the law of crimes and the administration of criminal justice, including analysis of the criminal act and the mental element in crime, consideration of specific offenses as defined by statute and the common law, and discussion of typical defenses in relation to specific crimes. 3 s.h. fall. *Beale, Dellinger, and Price*

**160. Property.** A study of the basic concepts of real property law and conveyancing, including historical background; estates in land, including the fee simple, the fee tail with its statutory substitutes, the life estate, the estate for years, and other nonfreeholds; concurrent ownership; types of future interests; conveyances before and after the Statute of Uses; landlord and tenant; the modern deed—kinds, delivery, description, title covenants, and agreements running with the land at law and in equity; easements; and recording and title registration. 4 s.h. spring. *Maxwell and Sparks*

**170. Torts.** An analysis of liability for personal injuries and injuries to property. The law of negligence occupies a central place in the course content, but the course also considers other aspects of tort liability such as strict liability, liability of producers and sellers of products, nuisance, liability for defamation and invasion of privacy, and commercial torts. The subjects of causation, damages, insurance (including automobile no-fault compensation systems), and workmen's



compensation are also included. 2 s.h. fall and 3 s.h. spring. *Christie, Lange, and Robertson*

## Second- and Third-Year Curriculum

In the absence of special authorization from the Dean, each student is required to take in each semester courses aggregating not less than twelve and not more than sixteen semester-hours.

The program in the second and third years is entirely elective, with the exception of the course in Lawyers and Clients (or some other course or seminar that deals with professional ethics that may be designated as its equivalent from time to time), which is required. In planning his or her program, however, the student should bear in mind that certain more basic courses may be prerequisites to other more advanced courses, and that for this reason—as well as to avoid possible schedule conflicts—it is generally advisable to take these more basic courses in the second year.

### Courses

	Fall		Spring
Administrative Law			3
Admiralty			3
Antitrust	4		
Business Associations			4
Business Associations	2	and	3
Business Planning	3		
Commercial Law	4		
Commercial Paper	2		
Community Property			2
Conflict of Laws	3		
Corporate Finance			2
Corporate Taxation			3
Criminal Procedure: Formal			2
Criminal Procedure: Police	2	or	2
Debtors' Estates			3
Environmental Law			3
Estate and Gift Taxation			3
Evidence	3		
Family Law			3
Federal Courts	3		
Fiduciary Administration	2		
Financial Information, Accounting and the Law	2		
Institutional Investors			2
International Business Transactions	3		
International Law	3		
Jurisprudence	3		
Labor Relations	3		
Labor Standards			2
Land Use Planning	2		
Lawyers and Clients	2		
Modern Real Estate Financing	3	or	3
Oil and Gas	3		
Personal Income Tax	3	or	3
Psychiatry for Lawyers	2		
Regulated Industries			3
Sales Financing			3
Securities Regulation			3
Trusts and Estates I	3		
Trusts and Estates II			3
Workmen's Compensation	3		

## Clinical Courses and Seminars

Civil and Criminal Trial Practice	3	or	3
Clinical Seminar in Civil Justice Administration	4	or	4
Clinical Seminar in Corrections			4
Clinical Seminar in Criminal Justice Administration	4	or	4
Clinical Seminar in Negotiation and Mediation of Domestic Disputes	3		
Clinical Seminar in Professional Malpractice			2
Clinical Seminar in Psychiatry and Law			2

## Other Seminars

Seminar in Antitrust and the Professions			2
Seminar in Children and the Law			2
Seminar in Chinese Law and Society: Past and Present			2
Seminar in Collective Bargaining	2		
Seminar in Communications Law and Policy	2		
Seminar in Comparative Law	2		
Seminar in Corporate and Partnership Planning and Drafting			3
Seminar in Employment Discrimination			2
Seminar in Estate Planning	2		
Seminar in Federal Practice of Civil Rights and Civil Liberties			3
Seminar in International Organizations	2		
Seminar in International Taxation			2
Seminar in Law of the Sea			2
Seminar in Legal History			2
Seminar in Legal Issues in Health Care	2		
Seminar in Legal Problems of a University	2		
Seminar in Medical-Legal-Ethical Issues			2
Seminar in Motion Picture Production, Finance, and Distribution			2
Seminar in Presidential Decision Making			2
Seminar in Public Sector Collective Bargaining	2		
Seminar in Tax and Fiscal Policy	2		

## Not Offered 1979-80

Economic Analysis of Legal Issues  
 Law and the Arts  
 Remedies  
 State and Local Government  
 Trusts and Wills  
 Seminar in Constitutional Law—Theories of Constitutional Adjudication  
 Seminar in Military Law  
 Seminar in Public Schools

All students are advised to study carefully the rules governing admission to the bar in each jurisdiction in which they are considering practicing after graduation. Some states, such as Indiana and Ohio, have specific requirements, and others such as New York, have detailed provisions relating to other matters. Students should also be aware that some federal district courts have promulgated or are considering rules requiring the successful completion of certain courses as a prerequisite for admission to practice. For example, a committee of the United States Court of Appeals for the Second Circuit has recommended that applicants for admission to the District Courts of that circuit show that they have success-

fully undertaken courses in evidence, civil procedure, criminal law and procedure, professional responsibility, and trial advocacy.

## UPPERCLASS COURSES

**200. Administrative Law.** A study of administrative agencies and legislative authority, information gathering and withholding, rule-making and order-formulating proceedings, judicial review of administrative action, constitutional limitations on administrative powers. 3 s.h. spring. *Oberst*

**400. Admiralty.** An examination of the special body of law governing maritime affairs, especially the transportation of goods and passengers by water. Included in this coverage are admiralty jurisdiction, marine insurance, carriage of goods, charter parties, general average, rights of injured seamen and others, collision, salvage, maritime liens and ship mortgages, limitations and liability, and governmental activity in shipping. 3 s.h. spring. *Paschal*

**205. Antitrust.** A study of the federal antitrust laws and the policy of using competition to control private economic behavior. 4 s.h. fall. *Havighurst*

**210.1. Business Associations.** A study of the formation of corporations and their management, the relations among shareholders and officers and directors, the impact of federal legislation on directors' duties, and the special problems of the closed corporation. 4 s.h. spring. *Fiflis*

**210.2. Business Associations.** An examination of the state and federal law pertinent to corporations and, to a lesser extent, partnerships as business entities. Detailed attention is given to the legal ground rules for the life cycles of corporations—to their organization, preincorporation transactions, basic financial structure, internal governance arrangements, dissolution, and other fundamental





changes. Further, a detailed study is made of those portions of the federal securities law that most closely affect the organic law of the corporation—federal regulation of the proxy system and of tender offers and federal restraints on inside trading and on certain other transactions in securities. Portions of the course are organized around a series of hypothetical problems designed to place the course materials in a realistic business-planning context and to emphasize the role of the corporate lawyer in facilitating clients' goals while minimizing adverse legal risks. Students are required to submit written solutions to two such planning problems during the course. 2 s.h. fall and 3 s.h. spring. *DeMott*

**300. Business Planning.** Advanced work in corporation, partnership, and income tax law, securities regulation, and accounting. Attention is focused on a series of problems that commonly and currently face business lawyers in the formation and financing of business organizations; restructuring ownership interests and financing their withdrawal; share repurchases for insiders' strategy; sales and purchases of businesses; and merger and other enterprise combination, enterprise division, and dissolution. The problems are analyzed, and solutions are presented in class discussion and papers by an integrated approach that embraces the interplay of restraints posed by various areas of the law. Prerequisite: Corporate Taxation (may be taken concurrently). 3 s.h. fall. *Cox*

**215. Commercial Law.** An integrated study of the law governing commercial transactions and emphasizing the application of the Uniform Commercial Code, particularly the articles dealing with commercial paper, bank deposits and collections, and secured transactions. Topics that are given particular attention include the function and incidents of common forms of negotiable instruments, the mechanics of the bank collection process, and the operation of retail credit systems. 4 s.h. fall. *Shimm*

**217. Commercial Paper.** An examination of the legal rules that apply to the basic types of negotiable payment devices—bank checks and promissory notes. The main focus of the course is on Articles 3 and 4 of the Uniform Commercial Code. The concepts to be emphasized include the legal and economic significance of negotiability, the protections afforded third-party transferees of these instruments, the nature of the indorser's and surety's obligation, and the treatment of events that frustrate collection. Also to be covered are basic materials on bank collections. 2 s.h. fall. *Weistart*

**218. Community Property.** A survey of the marital property laws of Arizona, California, Idaho, Louisiana, Nevada, New Mexico, Texas, and Washington, with comparison to Spanish system. Students may concentrate their studies on the law of one of the eight states. 2 s.h. spring. *Reppy*

**310. Conflict of Laws.** A study of the special problems that arise when the significant facts of a case are connected with more than one jurisdiction, including recognition and effect of foreign judgments, choice of law, federal courts and conflict of laws, and the United States Constitution and conflict of laws. 3 s.h. fall. *Reppy*

**315. Corporate Finance.** A consideration of the role and impact of financial analysis in the application and development of legal norms in connection with recurring corporate transactions. Coverage includes an investigation of the financial considerations arising in connection with valuation of a business corporation, rearrangement of the rights of creditors and stockholders in bankruptcy, establishment of dividend and reinvestment policies of publicly traded corporations, and measurement of the fairness and success of corporate acquisitions. Also studied is the regulation of financial information. Prerequisite: Business Associations. 2 s.h. spring. *Cox*

**320. Corporate Taxation.** A study of the special provisions of the Internal Revenue Code concerning the tax effects of the major events that occur in the life span of a corporation, including the taxation of distributions of corporate property to shareholders and the formation, reorganization, and liquidation of corporations. Prerequisite: Personal Income Taxation. 3 s.h. spring. *Gann*

**223. Criminal Procedure: Formal Procedure.** A study of the basic elements of criminal procedure, with special emphasis upon bail, criminal discovery, plea bargaining, prosecutorial discretion, preliminary hearings, the grand jury, professional ethics in criminal cases, speedy trial, and sentencing. 2 s.h. spring. *Everett*

**222. Criminal Procedure: Police Procedure.** A study of the basic elements of criminal procedure, with special emphasis upon "stop and frisk," arrest, search and seizure, confession suppression, lineups, electronic surveillance, and operation of the exclusionary rule. 2 s.h. fall, *Everett*; or 2 s.h. spring. *Pye*

**325. Debtors' Estates.** A study of the methods by which conflicts between the financially distressed debtor and creditors, and conflicts among creditors may be resolved. Considered and comparatively evaluated are remedies invoked by both the debtor and a creditor or creditors, those looking to both debtor liquidation and debtor rehabilitation, and those both without and within the Bankruptcy Act. These remedies include individual collection procedures, informal debt-adjusting and counseling, common law settlements, general assignments, receiverships, straight bankruptcy, and chapter proceedings. Against this background, proposed and recently enacted legislative changes are discussed and appraised. Prerequisite: Commercial Law or Sales Financing or permission of the instructor. 3 s.h. spring. *Shimm*

**359. Economic Analysis of Legal Issues.** An exploration of diverse topics in law and economics such as property rights and externalities, tort law and optimal accident prevention, deterrence and criminal prosecution, antitrust economics, public utility regulation of natural and other monopolies, economic effects of administrative procedure, bargaining and game theory, the economics of contracts, and theories of economic justice. 3 s.h. (Not offered 1979-80)

**327. Environmental Law.** A study of recent statutes and cases related to environmental management and natural resource protection. Emerging national environmental policy is examined within its social, economic, and ecological context. 3 s.h. spring. *Schroeder*

**330. Estate and Gift Taxation.** A study of the rules governing federal taxation of gifts, trusts, and estates, including the federal income tax laws relating to trusts and estates. Prerequisite: Personal Income Taxation (may be taken concurrently). 3 s.h. spring. *Adams*

**225. Evidence.** A study of the theory and rules governing the presentation of evidence to a judicial tribunal, including the function of the judge and jury; the concept of relevancy; character evidence; judicial notice; real and demonstrative evidence; authentication of writings; the best evidence rule; competency, impeachment, and rehabilitation of witnesses; hearsay and the exceptions to its exclusion; and privileged communications. 3 s.h. fall. *Beskind*

**335. Family Law.** A study of the legal problems of the family. This includes consideration of the relationship of the parent, the child, and the state, with an emphasis on subjects such as child custody, adoption, and neglect, as well as marriage, divorce, nonmarital cohabitation, and reproductive decision making (contraception, abortion, sterilization, and artificial insemination). 3 s.h. spring. *Beale*



**340. Federal Courts.** A study of the federal courts with respect to the part played by them in achieving a workable federalism. Special attention is given to the original jurisdiction of the federal district courts, the relationship of the federal courts to state courts and state law, and the permissible and desirable range of federal judicial power. 3 s.h. fall. *Paschal*

**227. Fiduciary Administration.** An examination of the nature of the fiduciary office; the functions, powers, and duties of executors, administrators, and trustees; the managerial and investment functions of a fiduciary; legal relation-



ships of a fiduciary with beneficiaries and with third persons; and remedies for breach of fiduciary duties. Prerequisites: Trusts and Estates I and II or Trusts and Wills. 2 s.h. fall. *Sparks*

**250. Financial Information, Accounting, and the Law.** An examination of the significance of financial information to two important groups: investors and creditors. This objective is sought through an examination and analysis of accounting principles and practices as they interface with a variety of legal problems. The course materials also present a wealth of information arising from empirical studies of stock price behavior in response to financial information as further evidence of the information needs of investors. Contemporary reporting problems such as the regulation of financial forecasts, accounting for the gains and losses arising from inflation, the role of financial information in predicting business failure, and the information needs of investors in an efficient market are singled out for special consideration, along with the more orthodox coverage of the fundamentals of accounting theory and practice. 2 s.h. fall. *Cox*

**337. Institutional Investors.** An examination of the behavior and responsibilities of mutual funds, life insurance companies, pension funds, bank trust departments, charitable foundations, and other institutional investors. Questions to be examined are the obligations institutional investors owe to their beneficiaries, the companies in which they invest, and to society generally. Of equal concern are the economic considerations that guide the investment behavior of institutional investors and underlie their regulation. Prerequisite: Business Associations. 2 s.h. spring. *Cox*

**345. International Business Transactions.** A study of the legal framework of United States foreign trade and investment, foreign trade and investment laws of selected foreign countries, the function of international economic law, international economic agreements, and problems of foreign trade and investments. 3 s.h. fall. *Grzybowski*

**230. International Law.** An introduction to the public international law of peace, including the nature and sources of international law; its place in national and international decision making; the roles of international organizations, states, and individuals in the international legal system; bases and limitations of jurisdiction; the utilization and interpretation of treaties and other international agreements; and some aspects of the regulation of economic activity within the international system. 3 s.h. fall. *Robertson*

**235. Jurisprudence.** A historical examination of the development of legal philosophy from ancient times to the contemporary period. 3 s.h. fall. *Christie*

**240. Labor Relations.** A study of the law of labor-management relations, centering upon the National Labor Relations Act, as amended. The course investigates problems involved in the regulation of industrial conflict (strikes, picketing, boycotts, and unfair labor practices by employers), the establishment of the collective bargaining relationship, the negotiation and enforcement of the collective agreement, the arbitration of disputes under the agreement, the relationship between the union and its members, and the protection of individual and minority rights. 3 s.h. fall. *Livengood*

**350. Labor Standards.** A survey of government regulation of conditions of employment, including the wage and hour laws, unemployment insurance, equal employment opportunity, OSHA, workmen's compensation, OASDI, and other social security legislation. In addition to examining the respective roles of legislation and private collective bargaining in determining standards for the employment relationship, the course considers contrasts in the administrative structures that have been created to implement the various statutes affecting employment. 2 s.h. spring. *Livengood*



**355. Land Use Planning.** A survey of legislative, administrative, and judicial controls utilized to facilitate the orderly development and redevelopment of real property. This consideration includes public and private nuisance, zoning, subdivision control, housing codes, street mapping, and condemnation. The clash of individual and societal interests in land use is explored through cases involving the distinction between valid police power regulations and "takings" for public use that require payment of compensation. Problems of urban renewal, regional planning, and pollution of water and air also receive consideration. 2 s.h. fall. *Everett*

**357. Law and the Arts.** An introduction to basic problems in entertainment law, the area of speciality practice involving the representation of publishers, broadcasters, cable television operators, film producers, artists, writers, musicians, and performers. The course includes detailed instruction in the law of copyright as well as unfair competition in artistic works, the protection of ideas, the right of publicity, performers' rights, and selected aspects of defamation and invasion of privacy. Offered in alternative years. 3 s.h. (Not offered 1979-80)

**360. Lawyers and Clients.** A study of the function of lawyers; the organization of legal education and the profession; legal relations between lawyers and clients, including fee arrangements; lawyers' liability for malpractice; standards of professional conduct; techniques for making legal services available; and the role of lawyers in litigation, negotiation, counseling, and politics. 2 s.h. fall. *Carrington*

**365. Modern Real Estate Financing.** An examination of techniques of real estate financing, including conventional mortgages, subdivision development, and federal assistance to real estate developers. 3 s.h. fall, *Maxwell*; or 3 s.h. spring. *Everett*

**396. Oil and Gas.** A study of the law governing the recognition and protection of property interests in oil and gas in natural reservoirs and an analysis of the transactions, particularly the oil and gas lease, by which the right to produce oil and gas is purchased. Although the course is focused on the private law problems of landowners and firms interested in mineral development, the legal problems and policy implications of government intervention for conservation and for economic regulation are considered. An elementary consideration of the impact of the federal income tax on oil and gas transactions is a part of the course. 3 s.h. fall. *Maxwell*

**255. Personal Income Taxation.** An introduction to federal income taxation, with emphasis on the determination of income subject to taxation, deductions in computing taxable income, the character of the income realized, and the proper taxpayer on which to impose the tax. 3 s.h. fall, *Galvin*; or 3 s.h. spring. *Gann*

**530. Psychiatry for Lawyers.** An exploration and discussion of factors that influence personality development throughout the life cycle and major psychiatric syndromes as a means of affording greater insights into problems that are presented in a variety of legal contexts. 2 s.h. fall. *C. Shimm and M. Shimm*

**370. Regulated Industries.** A study of government economic regulation in such regulated industries as transportation, electric power, telephone, broadcasting, oil and gas, and health care, with emphasis on control of entry, mergers, and rates, and on the interface between regulation and the antitrust laws. 3 s.h. spring. *Havighurst*

**332. Remedies.** A survey of the law of judicial remedies in various fields of substantive law. Primary emphasis will be on injunctive and other equitable relief and on remedies doctrines in civil rights cases. 2 s.h. (Not offered 1979-80)

**373. Sales Financing.** An examination of the problems that arise in connection with the financing of personal property transactions on a secured basis. A major part of the course deals with the operation of Article 9 of the Uniform Commercial Code. Thus, attention is given to the process of creating and perfecting security interests, a definition of the rights of third parties who may claim a competing interest in the goods (e.g., purchasers, lien creditors, and the like), and the statutory limitations on the right of foreclosure and repossession. As time permits, attention is also given to the interaction of Article 9 and the bankruptcy laws, federal regulation of consumer financing, and selected sales law aspects to secured lending. 3 s.h. spring. *Weistart*

**375. Securities Regulation.** An in-depth study of state and federal securities regulation statutes applied in realistic business contexts. 3 s.h. spring. *Fiflis*

**390. State and Local Government.** An examination of the scope of local government power, intergovernmental relations, legislation by local government, enforcement of regulatory measures, labor-management relations in public employment, financing local government, public expenditures, urban renewal, housing and code enforcement, eminent domain, and governmental tort liability. 2 s.h. (Not offered 1979–80)

**265, 270. Trusts and Estates I and Trusts and Estates II.** An examination of noncommercial property dispositions, both testamentary and *inter vivos*, including the following topics: the estate system, trusts, and powers of appointment as instruments for estate planning; intestate succession; execution and revocation of wills; creation of trusts; class gifts and construction; ademption and lapse; integration of dispositive schemes; charitable trusts; resulting trusts; remedies for wrongful interference with succession and transfer; problems in trust administration; and rules against perpetuities, accumulations, and restraints on alienation. Students may take one or both semesters, except that Trusts and Estates I is a prerequisite to Trusts and Estates II. 3 s.h. fall (Trusts and Estates I), *Sparks*; 3 s.h. spring (Trusts and Estates II). *Sparks*

**273. Trusts and Wills.** A study of intestate succession, making and revoking of wills, limitations on testamentary power, will substitutes, the creation of private express trusts, charitable trusts, and fiduciary responsibility. Future interest problems (such as the rule against perpetuities) are not covered. This course is offered as an alternative to Trusts and Estates I and II; a student may not take both Trusts and Wills and Trusts and Estates. 3 s.h. (Not offered 1979–80)

**547. Workmen's Compensation.** An examination of the main elements of workmen's compensation law in the United States, together with questions of conflict of laws, third-party actions, and coordination with other social insurance programs. 2 s.h. fall. *Larson*

## CLINICAL COURSES AND SEMINARS

**380. Civil and Criminal Trial Practice.** An introduction to the civil and criminal litigation process and attendant skills. The course emphasizes the interactions between attorneys and their clients and between lawyers and juries by use of simulation and videotape pedagogy. Areas of inquiry include interviewing, negotiation, trial evidence, jury selection, opening statements, closing arguments, and direct- and cross-examination. Each student completes the course requirements by participating as counsel in a full jury trial. Prerequisites: Civil Procedure, Criminal Procedure: Police Procedure, and Evidence. 3 s.h. fall, *Beskind, Fox, and Taylor*; or 3 s.h. spring. *Fox, Mailman, and Taylor*

**531. Clinical Seminar in Civil Justice Administration.** Practical exercises entailing two-hour classroom component of simulated cases from initial client



interview through discovery and trial, coupled with extramural placement to practice at least ten hours each week under the North Carolina Third-Year Practice Rule. Past placements have included legal aid offices in Durham, Raleigh, and Hillsborough and the Consumer Protection Division of the North Carolina Attorney General's office. Prerequisites: Civil Procedure, Criminal Procedure: Police Procedure, Evidence, and Trial Practice. 4 s.h. fall, *Taylor*; or 4 s.h. spring. *Bartlett*

**540. Clinical Seminar in Corrections.** A view of postconviction legal issues, including habeas corpus and constitutional rights of prisoners. The clinical aspect of the seminar requires each student to practice with postconviction or prisoners' rights office pursuant to the North Carolina Rules Governing Practical Training of Law Students. Placements include North Carolina Prisoner Legal Services, State Inmate Grievance Commission, and private law firms doing postconviction work. Prerequisites: Civil Procedure, Criminal Procedure: Police Procedure, Evidence, and Trial Practice. 4 s.h. spring. *Mailman*

**521. Clinical Seminar in Criminal Justice Administration.** An examination of the criminal justice system from the point of view of the criminal justice practitioner. Using videotape simulation and gaming techniques, students will participate as attorneys in a mock case, from initial interview through trial, covering all aspects in the development of criminal litigation. The clinical phase of the seminar requires each student to practice with criminal justice practitioners pursuant to the North Carolina Rules Governing Practical Training of Law Students. Placements include district attorneys and private defense counsel. Prerequisites: Civil Procedure, Criminal Procedure: Police Procedure, Evidence, and Trial Practice. 4 s.h. fall, *Mailman*; or 4 s.h. spring. *Beskind*

**523. Clinical Seminar in Professional Malpractice.** A problem-approach study of the tort system as a method of regulating professional practice. Effectiveness of controls of medical and legal ethics by professional associations and alternative regulatory mechanisms are also considered. 2 s.h. spring. *Wagner*



**551. Clinical Seminar in Negotiation and Mediation of Domestic Disputes.** Simulated exercises in dispute settlement involving such matters as marital property rights, alimony and support, and child custody. Special emphasis is given to mediation as an alternative to adversary dispute resolution. Consideration is given to the tax implications of various arrangements. Ethical issues receive appropriate attention. Some sessions involve consultation with a professional psychologist. Prerequisites: Family Law, Personal Income Taxation, and permission of the instructor. 3 sh. fall. *Lewis*

**529. Clinical Seminar in Psychiatry and Law.** An examination of the basic concepts of clinical psychiatry utilizing small-group teaching in a seminar format. Depression, mania, schizophrenia, paranoia, sociopathy, neuroses, and personality disorders are discussed. Patient interviews are utilized to demonstrate the principal mental illnesses. Training is provided in conducting interviews with psychiatric patients. In addition, general interview technique is demonstrated, focusing on verbal and nonverbal communication, utilizing videotape. Several sessions focus on the basic principles of forensic psychiatry. Competency to stand trial, the insanity plea, and the commitment process are discussed. 2 s.h. spring. *Brodie*

## OTHER SEMINARS

**577. Seminar in Antitrust and the Professions.** An examination of the impact of the recent extension of antitrust laws to "the learned professions." In addition to considering the significance of these developments for professionalism, special antitrust issues are also addressed. 2 s.h. spring. *Havighurst*

**511. Seminar in Children and the Law.** An examination of the legal status of the minor—infant, child, and adolescent. Attention is devoted not only to the minor in the context of the criminal justice (or juvenile justice) system, but also to subjects such as the relationship between parents and minors, and state and parental control over minor's reproductive decision making. 2 s.h. spring. *Beale*

**513. Seminar in Chinese Law and Society: Past and Present.** A survey of the evolution of Chinese legal thought and practice from its origins to contemporary development, with an emphasis on an examination of the law of late imperial eighteenth to early twentieth centuries) and People's China. Particular attention is focused on the relation of law to social ideals, to social change, and to politics. In addition to conventional criminal and civil processes, the informal and extrajudicial institutions, procedures, and norms that have been employed in China are also studied. Readings include "legal novels," and translations of laws, cases, and jurisprudential essays from both traditional and contemporary China. Prior familiarity with Chinese history is unnecessary. 2 s.h. spring. *Ocko*

**584. Seminar in Collective Bargaining.** A comprehensive treatment of the legal and practical aspects of negotiating a collective bargaining agreement in the private sector. There is substantial student participation, together with practical demonstrations relating to arbitrations and typical bargaining problems. Prerequisite: Labor Law. 2 s.h. fall. *Siegel*

**503. Seminar in Communications Law and Policy.** An examination of the following areas: First Amendment theory and development; regulation of the media as businesses; the right to gather information; proposed rights of access to the press; defamation and invasions of privacy; copyright; the regulation of obscenity and indecent matter; and the special regulatory position of the electronic mass media under the Communications Act of 1934, with particular emphasis on license applications and renewals, cross-ownership and control, network practices, programming, and cable and pay television. 2 s.h. fall. *Lange*



**512. Seminar in Comparative Law.** An examination and comparison of the law of selected jurisdictions on certain specific topics. The history, sources, and methods of the civil law are investigated, discussed, and compared with those of common law countries, with specific emphasis on administrative law and procedure, social welfare programs, and judicial review of administrative action. 2 s.h. fall. *Grzybowski*

**625. Seminar in Constitutional Law—Theories of Constitutional Adjudication.** An examination of the role of the Supreme Court and methods of deciding constitutional issues, beginning with such topics as the relevance of constitutional history, legislative and administrative motive, "legislative facts," and interest balancing; continuing with doctrinal problem areas such as substantive due process and fundamental rights; and concluding with consideration of current constitutional cases raising issues discussed earlier in the seminar. 3 s.h. (Not offered 1979-80)

**505. Seminar in Corporate and Partnership Planning and Drafting.** A problem-oriented approach to practical legal issues arising in the field of corporations and partnerships. Each problem is designed to require the student to grasp the client's general business situation and the goals involved and the legal issues; to plan the transaction and the requisite steps necessary to consummate it in such a way as to avoid or minimize legal, business, and taxation pitfalls; and to draft legal memoranda and other appropriate legal documents. 3 s.h. spring. *Pinna*

**517. Seminar in Employment Discrimination.** A study of the role of law in connection with problems of discrimination in employment, focusing primarily upon federal law prohibiting race and sex discrimination. The seminar reviews the sources of the law (the Constitution, the civil rights acts, labor relations statutes and other legislation, and presidential executive orders), analyzes the legal standards applicable to specific employment practices, compares alternative avenues for seeking relief, examines some of the problems of procedure and proof, and considers the propriety and effectiveness of various remedies, including affirmative action programs. 3 s.h. spring. *Livengood*

**515. Seminar in Estate Planning.** An examination of the problems and techniques of tax and estate planning. Prerequisites: Estate and Gift Taxation and Trusts and Estates I and II, or permission of instructor. 2 s.h. fall. *Powe*

**500. Seminar in the Federal Practice of Civil Rights and Civil Liberties.** A study of advanced constitutional law and federal practice, working through a series of problems to provide: (a) familiarity with the principal federal statutes (procedural, substantive, and remedial) used in civil rights litigation; (b) their judicial interpretation and application; and (c) a consideration of frontier constitutional issues. 3 s.h. spring. *Van Alstyne*

**563. Seminar in International Organizations.** An exploration of the principal legal questions, including current controversies, affecting the United Nations and other international organizations. 2 s.h. fall. *Larson*

**557. Seminar in International Taxation.** An examination of the federal income tax imposed on income earned in foreign countries either by citizens and residents of the United States or by foreign corporations that are controlled by citizens and residents of the United States. The course also includes a study of the federal income tax imposed on nonresident aliens and foreign corporations on their income derived from United States sources. Prerequisites: Personal Income Taxation and Corporate Taxation (may be taken concurrently). 2 s.h. fall. *Gann*

**507. Seminar in Law and Literature.** An examination of the roles played by lawyers in fiction, film, and drama. Students are required to maintain written

journals and to participate in the production of a play. Offered in alternate years. 2 s.h. (Not offered in 1979–80)

**620. Seminar on Law of the Sea.** An examination of the legal problems resulting from uses of the seas and the efforts made toward resolution of those problems. The seminar's focus is on the jurisdictional problems created by the competing claims of nation-states to competence as to the territorial sea, the continental shelf, the contiguous zone, economic zones, and the seabed. These claims are examined in the context of specific uses of the seas, including navigation, military, fishing, extraction of minerals, and scientific research. Prerequisite: International Law (may be taken concurrently). 2 s.h. spring.  
*Robertson*

**410. Seminar in Legal History.** A study of the history of American law during a defined chronological period. The first meetings of the seminar are devoted to discussions of the writing of legal history. Thereafter, students are required to write a paper on some aspect of law during the period. 2 s.h. spring.  
*Pratt*

**528. Seminar in Legal Issues in Health Care.** A study of the health care delivery system and the legal problems it presents. The seminar will direct attention to licensing and other controls over physicians and other health personnel, the law of medical malpractice and other mechanisms for assuring the quality of care, regulatory mechanisms to contain costs, and proposals for national health insurance or other fundamental reform. 2 s.h. fall. *Havighurst*

**358. Seminar in Legal Problems of a University.** A problem approach to some typical and recurring legal issues confronting higher educational institutions, especially in their capacity as charitable corporations operating in a commercial and business context. Legal and policy problem areas covered may include the following: the interpretation of basic charter documents and foundations for legal authority, the mode of financing current operations and capital improvements, special problems of university-related medical centers, the management of endowment funds, local and federal taxation problems, problems of federal regulations, and legal questions arising out of the relationships with faculty, students, and unincorporated associations such as the NCAA. 2 s.h. fall. *McDonald*

**527. Interdisciplinary Seminar in Medical-Legal-Ethical Issues.** A seminar composed of students and faculty from the Medical, Law, and Divinity Schools for critical consideration of selected pertinent issues of mutual professional interest. 2 s.h. spring. *Gianturco (medicine), Shimm (law), and Smith (divinity)*

**570. Seminar in Military Law.** A study of military jurisdiction, the rights of military personnel, and the body of both substantive and procedural law that has developed under the Uniform Code of Military Justice. In addition to its other goals, the seminar seeks to develop skills in statutory interpretation and to encourage comparisons between civilian and military criminal law administration. 2 s.h. (Not offered in 1979–80)

**504. Seminar in Motion Picture Production, Finance, and Distribution.** An exploration of most legal aspects of the independent motion picture production. The subject matter includes legal restraints on capital acquisition by antitrust laws; conventional bonding and financing agreements; application of tax laws and availability of foreign and American tax shelters; the producer's relationship with authors, writers, composers, actors, directors, cinematographers, editors, and members of the production crew under such relevant but diverse laws as copyright and labor; and conventional release, distribution, and exhibition agreements, with some emphasis on antitrust law. Basic working knowledge of the motion picture industry or comparable entertainment industry background is presupposed. Cer-

tain aspects of the course may be transferable to other forms of independent production, such as musical performances, recording, or theater. Course requirements include extensive research and drafting, and some negotiations. Enrollment is limited to three to five students, with permission of the instructor required to enroll. 2 s.h. spring. *Lange*

**541. Seminar in Presidential Decision Making.** An examination of decision making by the President of the United States in the area of National Security Affairs. In addition to discussing the legal framework in which these decisions must be made, an attempt is made to ascertain and evaluate the full range of factors that must be taken into account in reaching such decisions, including the economic and political consequences of those decisions on both the national and international levels. The seminar considers how the relationships among legal institutions can affect the process of decision making. It approaches the subject from the point of view of a lawyer who is serving in a policy-making role in the executive branch of the government. A number of guests with experience in foreign policy decision making participate from time to time in the seminar's discussions. 2 s.h. spring. *Christie*

**535. Seminar in Public Schools.** An examination of public elementary and secondary education from two perspectives. The initial focus is on the institutional and legal framework—the organization, financing, and governance of public schools and their relationship to other governmental bodies. The second part of the course examines education and the educational system from the perspective of the individual student. The various concepts of equal educational opportunity—equal resources, equal treatment regardless of race or color, equal outcomes—are reviewed. 3 s.h. (Not offered 1979–80)

**519. Seminar in Public Sector Collective Bargaining.** A consideration of the problems posed by the adoption of collective bargaining for state and local employees. Special attention is given to such sensitive issues as the subjects of bargaining, impasse resolution, regulation of strikes and picketing, union security arrangements, and accommodation between governmental responsibilities and the collective bargaining process. A pervasive inquiry is the extent to which labor relations law as developed in the private sector can be translated into public employment. Prerequisite: Labor Relations. 2 s.h. fall. *Livengood*

**543. Seminar in Tax and Fiscal Policy.** A study of the interaction between budgetary demands and revenue policy; equity and fairness of taxation; effect of taxation on business activity; relationship between federal and state taxing systems; and social, political, and economic implications of the tax structure. 2 s.h. fall. *Galvin*

## COURSES IN OTHER DIVISIONS OF THE UNIVERSITY

The courses in other divisions of the University that are listed below may be of particular interest to law students.

### Business Administration

**346. Public Policy of the Firm.** Builds on the theory of market failure to describe the rationale for societal intervention in business activities and reasonable firm responses. Considers environmental action, monopoly relations, discrimination, poverty, consumer issues, and problems arising from shifts in demand and supply. 3 s.h. spring. (Instructor to be announced)

### Philosophy

**206.S. Topics in Ethical Theory.** Responsibility in legal and moral contexts. 3 s.h. spring. *Golding*

**2045A. Philosophy of Law.** Natural law theory and positivism; the idea of obligation (legal, political, social, moral); and the relation of law and morality. 3 s.h. fall. *Golding*

### **Public Policy Sciences**

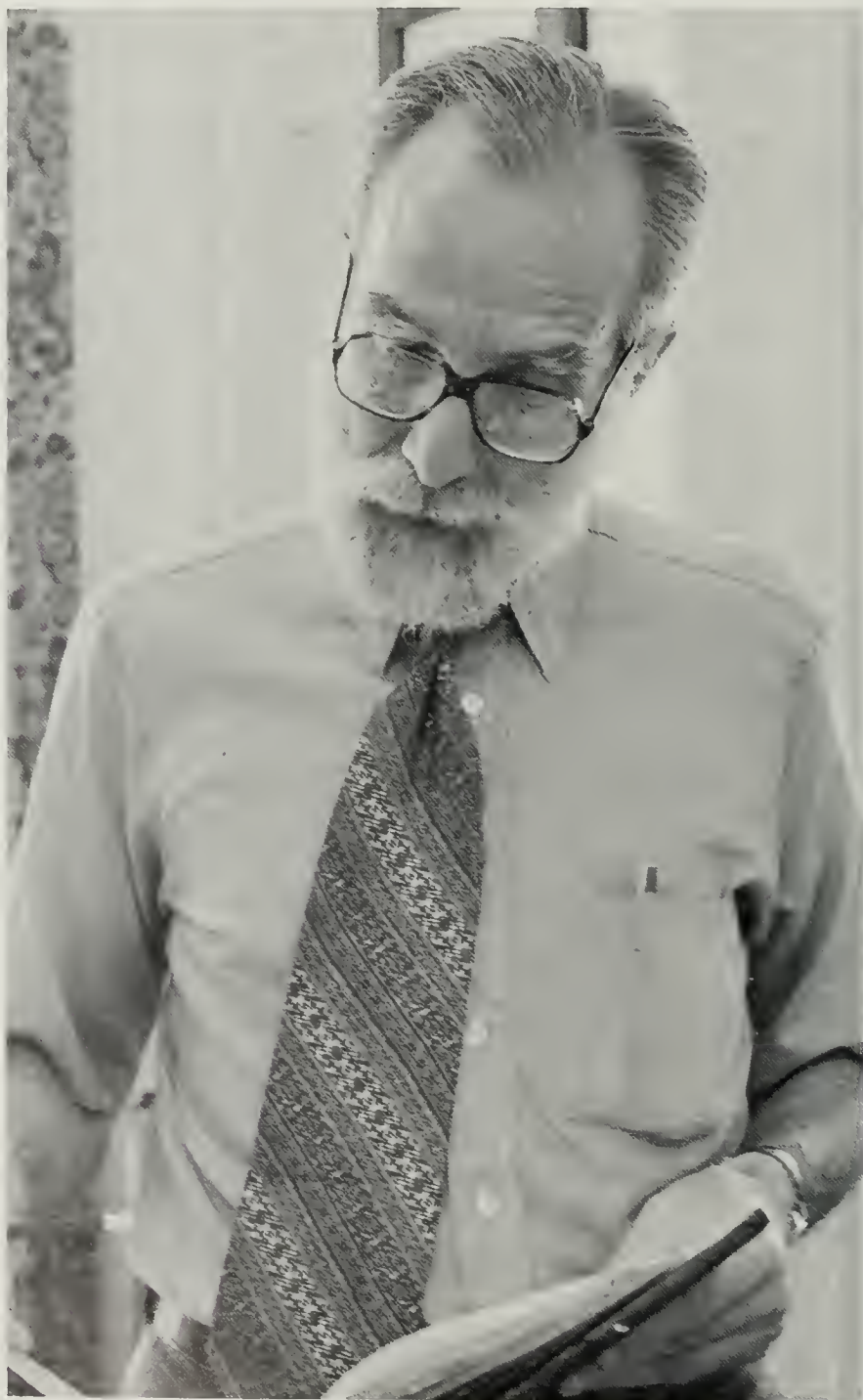
**221. Analytical Methods I: Decision Analysis for Public Policy Makers.** Methods for structuring decision dilemmas and decomposing complex problems, for appraising the decision maker's preferences for these consequences, and for re-examining the decision. 3 s.h. fall. *Behn*

**222. Analytical Methods II: Data Analysis for Public Policy Makers.** Sampling theory, Bayesian statistics, and regression analysis. Examples from problems in health care, transportation, crime, urban affairs, and politics. 3 s.h. spring. *Fischer*

**224. Applications of Administrative and Organization Theory.** Behavioral analysis of public organizations. Impact of organizational structures, individual needs and motivation, and politics on the formulation and implementation of policy by public bureaucracies. 3 s.h. spring. *Hawley*



# Publications



## Publications

**Law and Contemporary Problems.** For forty-five years, the Law School has published the faculty-edited quarterly, *Law and Contemporary Problems*. The journal is distinctive among professional legal publications in both its format and its content. Each issue is devoted to a symposium on a particular topic of contemporary interest. These topics are approached from an interdisciplinary perspective with contributions by lawyers, economists, social scientists, scholars in other disciplines, and public officials. Recent symposia have dealt with such diverse topics as valuing lives, criminal process in the seventies, reweaving the corporate veil, and the economics of bankruptcy reform. In the near future, symposia will be devoted to such topics as school desegregation, the law of war, growth policy, and human rights.

The journal, currently under the editorial direction of an interdisciplinary faculty advisory committee, is widely distributed, and its subscribers include general university libraries, governmental agencies, and foreign educational institutions, as well as the more traditional law libraries and law firms. Through arrangements with commercial publishers, selected issues of the journal are also reprinted for general book trade distribution.

**Duke Law Journal.** The Law School also publishes the student-edited *Duke Law Journal* six times a year. About one-half of its contents consists of notes and comments on current legal developments written by members of the student body; the balance consists of articles submitted by members of the legal profession and other academics. Full responsibility for the selection and editing of material and for the general operation of the *Journal* is vested in its student editorial board and its elected officers.

# General Regulations



## **University and Law School Rules**

Students are subject to the rules and regulations of the University and the Law School that are currently in effect, or those that in the future may be promulgated by the appropriate authorities of the University. Every student, in accepting admission, indicates a willingness to subscribe to and be governed by these rules and regulations. The student also acknowledges the right of the University to take such disciplinary action, including suspension and/or expulsion, as may be appropriate, for failure to abide by these rules and regulations, or for other conduct adjudged unsatisfactory or detrimental to the University.

## **Policy Concerning Pickets, Protests, and Demonstrations**

Duke University respects the right of all members of the academic community to explore and to discuss questions that interest them, to express opinions publicly and privately, and to join together to demonstrate their concern by orderly means. It is the policy of the University to protect the exercise of these rights from disruption or interference.

The University also respects the right of each member of the academic community to be free from coercion and harassment. It recognizes that academic freedom is no less dependent on ordered liberty than any other freedom, and it understands that the harassment of others is especially reprehensible in a community of scholars. The substitution of noise for speech and force for reason is a rejection and not an application of academic freedom. A determination to discourage conduct that is disruptive and disorderly does not threaten academic freedom; it is, rather, a necessary condition of its very existence. Therefore, Duke University will not allow disruptive or disorderly conduct on its premises to interrupt its proper operation. Persons engaging in disruptive action or disorderly conduct shall be subject to disciplinary, suspension and/or expulsion, and also to charges of violations of law.

The foregoing general statement of policy is not to be construed as limiting the University's right to maintain an atmosphere conducive to scholarship.

## **Registration**

All students are required to register on the dates prescribed in the Law School calendar, at which time class schedules and course cards must be completed and



approved. A student's registration for any semester is not complete until all indebtedness is settled with the Office of the Bursar. Students are not eligible to attend classes or make use of University facilities if they have any outstanding debt to the University.

Students may alter their registration by adding or dropping courses any time during the first two weeks of a semester, except that in a seminar in which enrollment has been limited by the instructor's designation, no withdrawals from the seminar will be permitted without the permission of the instructor.

## **The Honor System**

The honor system of the Duke Law School demands the highest standards of academic and professional conduct. It is enforced by a student judicial code.

## **Bar Examinations and Requirements**

Many states now require that students, prior to or shortly after beginning the study of law, register with the Board of Bar Examiners of the state in which they plan to practice. Registration should be accomplished within thirty days after matriculation in law school. Prior to selecting the law school they will attend, at matriculation, and at the beginning of each subsequent year of law school, applicants are advised to consult the rules of all states in which they may be interested in practicing after graduation to determine the curriculum and other requirements of state bar examining authorities.

## **Rules Governing the Awarding of Degrees**

Degrees are awarded at Duke University in September, December, and May. The names of Duke Law School students who have successfully completed all of the necessary requirements for a degree are presented by the Dean to the University Secretary, who transmits them to the University faculty and the Board of Trustees for approval.

## **Motor Vehicle Registration**

Each motor vehicle operated on Duke University campuses by students enrolled in the School of Law must be registered at the traffic office, 2010 Campus Drive, within five days after operation on the campus begins, and thereafter must display the proper registration decal. An annual registration fee of \$20 will be charged for each automobile and \$10 for each motorcycle.

To register a vehicle, the student must present the following documents: (1) valid state registration for vehicle registered, and (2) valid state operator's license.

Parking, traffic, and safety regulations will be given to each student at the time of vehicle registration. Students agree to abide by these regulations in exchange for the privilege of operating a motor vehicle on the campus.



# Student Life



Duke University has an enrollment of approximately 9,000 students from every state and many foreign countries. Trinity College of Arts and Sciences, the Graduate School, the Graduate School of Business Administration, the Schools of Divinity, Engineering, Forestry and Environmental Studies, Law, Medicine, Nursing, the Marine Laboratory, and the Duke Hospital are the major components of the University. The University is about two miles from the business district of Durham and is situated on wooded hills constituting part of the 8,000-acre Duke Forest.

Durham, with a population of approximately 100,000, is in the piedmont region of North Carolina. Although this does not constitute a major metropolitan community, the resources of the combined Durham-Chapel Hill (eight miles away)-Raleigh (twenty-five miles away) area approximate those of many urban centers. Each of these cities contains a major university, the combined student population of which totals over 50,000, and the social and cultural activities they generate are widely and readily accessible. A large facility of the Environmental Protection Agency as well as the research facilities of several major corporations are located in the Research Triangle Park, a developing area southeast of Durham. Durham is noteworthy among southern cities for its thriving black business community.

## Living Accommodations

**Housing.** The majority of law students, both married and single, live in private off-campus housing. Apartments in Durham are plentiful and by national standards moderate in price. Good roads and the absence of heavy traffic make commuting to the Law School from a considerable distance easy. This enables students to choose from a wide variety of housing types. A full range of housing from ultra-modern apartments to rustic cottages is located within minutes of the Law School. Students desiring to live in off-campus housing may obtain from the Assistant Dean's office in midsummer a list of similarly situated incoming students with whom they will be able to share housing expenses. Both married and single students desiring to live off campus should plan to come to Durham one to two weeks early to find housing.

Campus housing is also available. Inquiries for information concerning the kinds of accommodations offered and rental charges should be directed to Manager of Apartments and Property, Department of Housing Management, Duke University, Durham, North Carolina 27706.

Opportunities to serve on the residential staff in undergraduate dormitories are available. The living accommodations vary in different dormitories, but usually



consist of a single room or a two-room apartment. The positions also provide financial assistance. Interested students or spouses should contact the Office of the Dean of Students, 121 Allen Building, Duke University, Durham, North Carolina 27706. Interviews are held in the spring.

## **Dining Facilities**

Dining facilities are located in the Union Building, within easy walking distance of the Law School. The cost of food for the academic year will average approximately \$945 if a student dines in University cafeterias.

A large number of law students prefer to bring their lunches from home and eat in one of the student lounge areas in the Law School. Vending machines are located on the ground floor.

## **Facilities for the Handicapped**

Duke Law School has anticipated many difficulties that might impede the work of otherwise qualified handicapped law students. Special parking spaces immediately in front of the Law School can be arranged. Inside and outside ramps have been constructed to facilitate access by students in wheelchairs. In addition, there is an elevator in the building. Blind students are guided between classes by voluntary student guides. Similar provisions will be made as necessary for other handicapped students admitted to the Law School.

## **Student Health**

One of the prerequisites for gaining the most from the University experience is a sense of well-being. The aim of the University Health Service is to provide medical care and health advice necessary to help the student enjoy being a part of the University community.

The main components of the health service include the University Health Services Clinic, located in the Pickens Building on the West Campus, and the University Infirmary on the East Campus. Emergency transportation, if required, can be obtained from the Duke campus police.

These facilities are available to all regularly matriculated law students of the University who have paid full tuition and the student health fee. Students who are living in Durham year-round while attending Duke University may elect to continue in the student health program during the summer months when they are not attending classes by paying the student health fee for this period. Proof of preregistration for the next semester is required. Students are not otherwise covered during vacations, and their dependents and members of their families are not covered at any time.

The Student Mental Health Service is located in the Pickens Building. It provides evaluations, brief counseling, and/or treatment for matters ranging from questions about normal growth and development to the most serious psychiatric disorders.

The University has made arrangements for a student Accident and Sickness Insurance Policy to cover all full-time students for a twelve-month period. It provides protection twenty-four hours per day, on and off campus, at home, or while traveling between home and school, and during interim vacation periods. For additional fees, a student may obtain coverage for a spouse or a spouse and child. The University expects all students to be financially responsible for medical expenses above those covered by the University student health program through its Accident and Sickness Insurance Plan, a private insurance policy, or personal financial resources. All full-time students in residence must either subscribe to the



University Accident and Insurance Plan or sign a waiver before their registration is complete.

## Bookstores and Other Facilities

Duke Law School students may purchase Law School texts at the University Bookstore in the Union Building on campus or at The Book Exchange located in downtown Durham at 107 Chapel Hill Street. New and used texts may also be purchased at a facility maintained for this purpose by the Duke Bar Association in the Law School basement.

Additional facilities on campus available to students include the Duke Station Post Office, a sundries store, a barbershop, a laundry, and a bank, all located in the basement of the Union Building.

## Honorary, Professional, and Social Organizations

**Order of the Coif.** The Order of the Coif is a national legal scholarship society with a local chapter at Duke University School of Law. Its purposes are "to foster a spirit of careful study and to mark in a fitting manner those who have attained a high grade of scholarship." Election is restricted to students standing scholastically in the highest 10 percent of the graduating class.

**The Duke Bar Association.** The Duke Bar Association coordinates the professional, social, and other extracurricular activities of the student body. The association resembles in its composition and purpose both a university student government and a professional bar association. It manages the speakers program, publicizes Law School activities, and sponsors athletic and social programs.

**Legal Research Program.** The Legal Research Program, supervised by a student editorial board, provides second- and third-year students with an opportunity to prepare legal memoranda on actual problems submitted by practicing lawyers, judges, or legislative committees. The program also assists in providing representation to indigents in appeals from denials of petitions for habeas corpus in the United States Court of Appeals for the Fourth Circuit. The briefs are written by the students under the supervision of a member of the faculty.

**Moot Court Board.** The Moot Court Board is composed of second- and third-year students who are chosen on the basis of their performances in intramural moot court competition. The board supervises the Hardt Cup and the Dean's Cup Competitions. In addition, the board provides personnel for teams entering intercollegiate competition. In 1975, a team from the Duke Moot Court Board won the prestigious National Moot Court competition, and in 1976, a Duke team placed second in that competition.

**Duke Law Forum.** The Duke Law Forum, through films, seminars, and speakers, traditionally seeks to stimulate and educate debate on national and legal issues. More recently, the forum has also sought to provide intellectual respite from the law by sponsoring lectures in various topics in literature, history, and philosophy.

**International Law Society.** Membership in the Duke International Law Society is open to the entire law student body. The society sponsors an annual distinguished speaker series with lecture topics ranging from the law of warfare to peace negotiations, from the law of the seas to space law. The scope is limited only by the interests of the society members and the student body at large. The society is currently exploring joint programs with local law schools, overseas study alternatives, and contributorships to international law journals throughout the country. Other activities include participation in the annual Philip C. Jessup International Moot Court Competition and attendance at conferences sponsored by the Association of Student International Law Societies.

**Women Law Students.** Women Law Students serves as a central organization for united action in meeting the problems that women encounter in the legal profession and endeavors to promote cooperation and friendship among women law students. The organization sponsors several projects, including conferences, work with women in the penal system, and lobbying for legislation favorable to women in North Carolina. The organization also works with women's groups in other law schools to improve the position of women in the legal profession at the national level.



**Black American Law Students Association.** The Law School chapter of BALSA is affiliated with the regional and the national BALSA. The aims of the local chapter are to provide a responsive student organization to aid the individual black law student at Duke and to instill a greater awareness of and commitment to the needs of the black community.

**American Bar Association's Law Student Division.** Duke Law School is one of over 100 participating law schools in the American Bar Association's Law Student Division. Formed only seven years ago, the division is the only national group representing law students' views within the American Bar Association. A member of the Fourth Circuit, along with the nine other schools in Virginia, West Virginia, and North and South Carolina, Duke has played a strong leadership role in the circuit as well as on the national level of the division. Locally, the Law Student Division has begun promotion of new clinical legal education programs, including its Night Rider project, in which students accompany policemen on their appointed patrols. Other areas of active concern have been the Third-Year Practice Rule in North Carolina and reform in penal institutions.

**National Lawyers Guild.** The guild is a national association of lawyers, law students, legal workers, and jailhouse lawyers that addresses itself to the need for change in our power structure and governing process. The Duke chapter seeks to provide an alternative to the academic approach to law by sponsoring opportunities for students to place their skills in the service of people needing representation for the effective assertion of their legal rights. Examples of recent projects include members working at the Durham Legal Aid Society and recycling the Law Library's discarded materials into a prison library.

**Forum for Legal Alternatives.** The FLA aims to broaden the range of opportunities for Duke law students in the study and practice of law. The work of the FLA is carried out through a decentralized committee system that encourages members to concentrate their efforts on projects that are of particular interest to them. The FLA committees have worked on expanding the information available to law students on noncorporate employment opportunities, organizing support for the Equal Justice Foundation (a Ralph Nader project), and administering a student-financed summer fellowship program for Duke law students with summer jobs in public interest and legal services areas. The FLA encourages the formation of new committees by members who wish to put particular projects into action.

**Devil's Advocate.** The *Devil's Advocate* is the publication of the students of the Law School. The aim of the *Advocate* is to combine a variety of articles and editorials concerning all aspects of law school life with satirical and humorous articles, anecdotes, caricatures, and cartoons to provide a light-hearted yet thought-provoking break in the Law School routine. The publication, which is unique among law school papers, has consistently proved to be the most popular voluntary activity at the Law School. The *Devil's Advocate* staff consists of an editor-in-chief, assistant editors, and contributors. All students, faculty, and administrators are invited to participate.

**Duke Law Band.** The band, which always welcomes new members, is an informal and leisurely group of law students who periodically get together to play jazz, ragtime, and beerhall music. The band plays at many of the Law School's major social affairs.

**Legal Fraternities.** The two legal fraternities are Hughes Inn of Phi Delta Phi and Wiley Rutledge Chapter of Phi Alpha Delta. These organizations sponsor luncheons, meetings featuring topics of professional interest, and several other social activities.



## Placement Service

Placement of Duke Law School students and graduates is the concern of an active placement office located in the Law Building. Its staff is composed of one full-time director, one full-time assistant, and several student assistants. The activities of the placement office can be broken down into three general categories: coordination of an extensive on-campus recruiting season; production of the *Duke Law School Placement Bulletin* and other publications designed to introduce the Law School and its students to the legal community; and custodial responsibility for a wealth of materials on legal careers, available positions, bar membership, and other related matters.

The on-campus recruiting occurs primarily during the fall of the year, when over 300 employers send representatives to interview members of the two upper classes. As a result of these interviews, a substantial number of students in each of these classes receive offers of employment. Eighty-five percent of the 1978 graduating class have reported employment, with an average starting salary of \$22,000.

Duke was the first law school to publish a placement bulletin, a type of publication since adopted by a number of other law schools. The *Duke Law School Placement Bulletin*, now in its twenty-ninth edition, contains the pictures and brief resumes of the graduating and second-year students. It is widely circulated among selected law firms, companies, government agencies, and other potential employers.

As the repository for a vast amount of law-career-related information, the placement office encourages students to explore the variety of professional opportunities available to them and seeks to instruct them in effective job hunting as well. Orientation meetings for students in all three classes are conducted by members of the staff, upperclass students, and invited speakers.

It should be emphasized, however, that the students themselves are primarily responsible for finding their own employment. They must be willing to devote a large amount of their time to letter writing and to interviewing, both on and off campus. It is common knowledge that the law schools of America are graduating more lawyers than can be absorbed by traditional legal positions. The Law School diligently attempts to assist its graduates, but the ultimate responsibility rests with each student.

## Employment Opportunities

The study of law is demanding. It is designed to occupy the full time of the student and calls for the highest level of concentration. It is unwise for students to dilute their efforts by outside work, especially during the critical first year of study.

For those who find some outside earnings necessary to meet the expense of studying law at Duke and who qualify for the college work/study program under applicable federal regulations, arrangements have been made to provide some part-time employment in the Law School. A number of positions in the law library are filled by law students. Students are often employed in their second and third years as research assistants for faculty members. The University maintains a general placement office to aid in finding employment, and law students may serve as undergraduate residence advisers if they have been at Duke one year or have previously held such positions.

The opportunities for employment in the University and surrounding community are as good for spouses of law students who are teachers, computer programmers, secretaries, or nurses as in most other areas of the country. Other types of desirable positions are also available. The Assistant Dean's office

maintains a list of superintendents of schools in nearby districts that is available upon request. The University personnel office and the Medical Center personnel office assist interested persons in locating suitable employment on campus.

## Entertainment and Recreation

Students of the Law School are entitled to use the University gymnasiums, tennis courts, swimming pools, golf course, and other recreational facilities. Within a short distance from the campus are facilities for horseback riding, woodland hiking, and sailing. Other opportunities for physical activity are available in the intramural program, as well as through such activity groups as the outing, sailing, and cycling clubs. North Carolina's mild climate makes most outdoor sports possible during much of the school year. The Appalachian ski slopes are about three and a half hours to the west, the Outer Banks the same distance to the east.

University athletic contests are held on the campus at various times during the academic year. Duke is a member of the Atlantic Coast Conference.



# Appendix A

## Former Schools of Duke Law Students

Adrian College	1	Grove City College	1
Agnes Scott College	1	Guilford College	1
Allegheny College	3	Hamilton College	1
Alma College	1	Harvard University	5
Amherst College	6	Haverford College	3
Arizona State University	1	Hendrix College	2
Arkansas Tech University	1	Hobart College	1
Asbury College	1	Hofstra University	1
Ashland College	1	Howard University	2
Bob Jones University	1	Indiana University	4
Boston College	4	Johns Hopkins University	3
Boston University	3	Kent State University	2
Bowling Green State University	2	Kenyon College	1
Brandeis University	3	Lafayette College	1
Brigham Young University	1	Lawrence University	1
Brown University	4	MacMurray College	1
Bucknell University	2	Marshall University	1
Capital University	1	Massachusetts Institute of Technology	1
Carleton College	1	Mercer University	1
Case Western Reserve University	2	Merrimack College	1
Catholic University	1	Miami University of Ohio	4
The Citadel	1	Michigan State University	2
City University of New York	1	Middle Tennessee State University	1
Claremont Men's College	1	Millsaps College	1
Clark University	1	Mount Holyoke College	3
Clemson University	1	Muhlenberg College	4
Colgate University	4	Nebraska Wesleyan University	1
College of William and Mary	2	Newberry College	1
College of Wooster	4	North Carolina A & T State University	1
College of the Holy Cross	2	North Carolina State University	1
Colorado College	1	Northern Arizona University	1
Colorado State University	1	Northwestern University	6
Columbia University	1	Oberlin College	3
Concordia College	2	Ohio Northern University	1
Cornell College	1	Ohio State University	1
Cornell University	12	Ohio University	3
Dartmouth College	4	Ohio Wesleyan University	1
David Lipscomb College	1	Ouachita Baptist University	1
Davidson College	4	Oxford University	1
Denison University	1	Pennsylvania State University	2
DePauw University	1	Pfeiffer College	1
Dickinson College	6	Princeton University	11
Drake University	1	Purdue University	1
Duke University	52	Randolph-Macon College	1
Earlham College	1	Reed College	1
East Carolina University	1	Rice University	2
Eastern Kentucky University	1	Rutgers University	2
Eastern Mennonite College	1	Seattle University	1
Eastern Washington State College	1	Skidmore College	1
Eisenhower College	2	Smith College	2
Emory University	7	Southeast Missouri State University	1
Florida Atlantic University	1	Southern Illinois University	1
Florida Southern College	1	Southern Methodist University	4
Florida State University	4	Southwestern University	1
Fordham University	1	Spelman College	1
Franklin and Marshall College	3	Stanford University	7
Furman University	1	Stetson University	1
George Peabody College	1	St. Bonaventure University	1
Georgetown University	9	St. Lawrence University	2
George Washington University	2	State University College of New York at Buffalo	1
Goucher College	1		

State University of New York at Albany	4	University of Nebraska	3
State University of New York at Binghamton	10	University of North Carolina at Chapel Hill	23
State University of New York at Brockport	1	University of North Carolina at Charlotte	1
State University of New York at Buffalo	4	University of North Carolina at Greensboro	1
State University of New York at Fredonia	1	University of Notre Dame	14
State University of New York at Oneonta	1	University of Oklahoma	2
Syracuse University	1	University of Pennsylvania	14
Tennessee Technological University	1	University of Pittsburgh	1
Texas Tech University	1	University of Puget-Sound	1
Thiel College	1	University of Redlands	1
Trinity College of Connecticut	2	University of Rochester	4
Tufts University	3	University of the South	2
Tulane University	3	University of South Carolina	3
Union College	3	University of South Florida	3
United States Military Academy	1	University of Tennessee	5
University of Alabama	5	University of Texas	1
University of Arkansas	3	University of Vienna	1
University of California at Berkeley	3	University of Virginia	2
University of California at Irvine	1	University of Washington	2
University of California at Los Angeles	1	University of Wisconsin	2
University of California at Santa Barbara	1	Ursinus College	1
University of Central Florida	1	Valparaiso University	1
University of Cincinnati	1	Vanderbilt University	9
University of Colorado	1	Vassar College	2
University of Connecticut	5	Virginia Military Institute	1
University of Delaware	3	Virginia Polytechnic Institute	1
University of Florida	7	Wabash College	1
University of Georgia	2	Wake Forest University	4
University of Illinois	3	Washington and Lee University	1
University of Iowa	6	Washington University at St. Louis	4
University of Kansas	2	Wellesley College	2
University of Kentucky	3	Western Kentucky University	2
University of Louisville	1	Western Maryland College	2
University of Maryland	4	Wheaton College	7
University of Miami	1	Whitman College	1
University of Michigan	6	Williams College	4
University of Missouri	3	Wittenberg University	2
University of Montana	1	Wofford College	1
University of Montevallo	1	Yale University	9

## Appendix B

### Home States of Duke Law Students

Alabama	10	Mississippi	2
Arizona	3	Missouri	10
Arkansas	7	Montana	1
California	12	Nebraska	6
Colorado	4	New Jersey	26
Connecticut	18	New York	72
Delaware	9	North Carolina	68
District of Columbia	2	Ohio	38
Florida	37	Oklahoma	3
Georgia	13	Pennsylvania	36
Hawaii	2	South Carolina	10
Illinois	21	Tennessee	15
Indiana	7	Texas	7
Iowa	11	Vermont	2
Kansas	3	Virginia	5
Kentucky	12	Washington	7
Louisiana	3	West Virginia	3
Maryland	22	Wisconsin	4
Massachusetts	16	Wyoming	2
Michigan	12	England	1
Minnesota	1		



# Appendix C

## First-Year Class (Class of 1981)

Abram, Jonathan Lynwood, B.A. (University of Florida), Tampa, Florida  
Addington, David Spears, B.S.F.S. (Georgetown University), Durham, North Carolina  
Adler, Marshall Stuart, B.A. (State University of New York at Buffalo), Eggertsville, New York  
Arne, Paul Harold, B.S. (University of North Carolina at Chapel Hill), Fayetteville, North Carolina  
Arter, David Michael, B.S. (Boston University), Lexington, Massachusetts  
Belles, Thomas Alfred, B.A. (George Washington University), Plantation, Florida  
Blanton, Kimberly Sue, B.S. (Arizona State University), Glendale, Arizona  
Bowen, Nancy Tawanda, B.A. (Florida State University), Macclenny, Florida  
Brandon, Karen Devlin, B.A. (Duke University), Baldwin, New York  
Campbell, Phillip Wayne, B.A. (University of Arkansas), Little Rock, Arkansas  
Carter, Douglas Lee, B.A. (University of Missouri), Springfield, Missouri  
Chartan, Michael Lawrence, B.A. (State University of New York at Binghamton), Plainview, New York  
Cioffi, Gregory John, B.S. (University of Connecticut), Branford, Connecticut  
Claiborne, Jonathan Edward, B.S. (University of Maryland), Hyattsville, Maryland  
Clark, Mark John, B.A. (University of Florida), Papillion, Nebraska  
Coleman, John James, B.A. (Duke University), Birmingham, Alabama  
Cone, Thomas Edward, B.A. (Amherst College), Greensboro, North Carolina  
Corr, Marianne, B.A. (University of Notre Dame), Rosemont, Pennsylvania  
Corrigan, Timothy John, B.A. (University of Notre Dame), Jacksonville, Florida  
Counts, Kenneth Lyn, B.S. (University of North Carolina at Chapel Hill), Charlotte, North Carolina  
Cox, Bill Kenneth, Jr., B.S. (University of Arkansas), Fayetteville, Arkansas  
Cox, Linda Sue, B.A. (University of Washington), Mercer Island, Washington  
Cravez, Glenn Edward, B.A. (George Washington University), Miami, Florida  
Deane, Diana Suzanne, B.A. (Mount Holyoke College), Ed.M. (Harvard University), Port Jefferson, New York  
De Ganon, Victoria Eve, B.A. (Columbia University), Bronxville, New York  
DeLaine, Allan Craigg, B.A. (Duke University), Clayton, North Carolina  
Denny, Rhonda Ann, B.A. (University of Maryland), Bethesda, Maryland  
Donaldson, Jeffrey Lynn, B.A. (State University College of New York at Buffalo), North Tonawanda, New York  
Dreeben, Michael Richard, B.A. (University of Wisconsin), M.A. (University of Chicago), Princeton, New Jersey  
Edwards, Ted Busby, B.A. (Stetson University), Fort Lauderdale, Florida  
Egerton, Kimberly Anne, B.A. (University of North Carolina at Chapel Hill), Greensboro, North Carolina  
Elmer, Denise Marie, B.A. (St. Lawrence University), Black River, New York  
Fazzone, Patrick Brock, B.A. (University of Connecticut), Fairfield, Connecticut  
Fine, David Alan, B.A. (Brandeis University), Chestnut Hill, Massachusetts  
Fitzgerald, Kevin Kim, B.A. (Allegheny College), West Des Moines, Iowa  
Fitzgerald, Patricia Eileen, B.A. (Miami University of Ohio), South Euclid, Ohio  
Fleischer, Lauren Jan, B.A. (State University of New York at Binghamton), Freeport, New York  
Flynn, Michael Calihan, B.A. (Indiana University), Morehead, Kentucky  
Fox, Russell Howard, B.A. (University of Rochester), Flushing, New York  
Frederick, Jane Hastings, B.A. (Dartmouth College), New Canaan, Connecticut  
Friedman, Dennis Gordon, B.A. (Amherst College), Shaker Heights, Ohio  
Frogge, Mark Alan, B.A. (University of Nebraska), Lincoln, Nebraska  
Fulton, Anne Elizabeth, B.A. (Carleton College), Kewanee, Illinois  
Gainey, Keith Eslin, Jr., B.A. (Miami University of Ohio), Parma, Ohio  
Gold, Carl, B.A. (Western Maryland College), Baltimore, Maryland  
Goshorn, Richard Henley, B.A. (College of Wooster), Fort Thomas, Kentucky  
Greene, Mervyn Al, B.A. (Stanford University), Birmingham, Alabama  
Grier, Joseph Lee, B.A. (Southern Illinois University), Naperville, Illinois  
Gustafson, David Douglas, B.A. (Bob Jones University), Greenville, South Carolina  
Hankey, David Lawrence, B.S. (Georgetown University), Arnold, Maryland  
Hardy, Isham Trotter, Jr., B.A. (University of Virginia), M.S. (American University), Hampton, Virginia  
Harkins, Thomas Franklin, B.A. (Furman University), Winston-Salem, North Carolina  
Harter, William Miles, Jr., B.A. (Duke University), Lyndhurst, Ohio  
Herman, Georg Nicholas, B.A. (University of North Carolina at Chapel Hill), Chevy Chase, Maryland  
Hines, Lenora Cecily, B.A. (Smith College), M.P.A. (New York University), Chapel Hill, North Carolina

Holland, Nancy Gretchen, B.A. (Dickinson College), Bethesda, Maryland  
 Hopkins, Leigh Hastings, B.A. (Duke University), Villanova, Pennsylvania  
 Hornaday, Suzanne M., B.A. (University of North Carolina at Charlotte), Concord, North Carolina  
 Horne, Terrell Thomas, B.A. (Vanderbilt University), Orange Park, Florida  
 Hostetler, Brian Jay, B.A. (College of Wooster), Wooster, Ohio  
 Howard, Eric Charles, B.A. (University of Delaware), Ocean View, Delaware  
 Howell, Ben Burke, A.B. (Pfeiffer College), Oakboro, North Carolina  
 Huber, Timothy Todd, B.S. (University of Tennessee), Oak Ridge, Tennessee  
 Ingber, Charles Joseph, B.A. (Johns Hopkins University), Marblehead, Massachusetts  
 Jamell, Paula Jean, B.A., B.S. (Arkansas Tech University), Russellville, Arkansas  
 Jenkins, Jon-Mark, B.A. (Lafayette College), Irvington-on-Hudson, New York  
 Jones, Kenneth Alan, B.A. (Pennsylvania State University), Greensboro, North Carolina  
 Jones, Wayne Alan, B.S. (Brigham Young University), Casper, Wyoming  
 Kelly, Robert Baxter, B.A. (Duke University), Baltimore, Maryland  
 Kern, Stephen Vincent, B.A. (Clark University), Burlington, Massachusetts  
 Keyse, John Lee, B.A. (College of Wooster), Columbia Station, Ohio  
 Klein, Steven Robert, B.A. (State University of New York at Albany), Pearl River, New York  
 Koczela, Emily O'Keefe, B.A. (Smith College), Chevy Chase, Maryland  
 Krahn, Paula Kathleen, B.A. (Cornell College), Mason City, Iowa  
 Kronish, Sharon Jeane, B.A. (Tulane University), Hollywood, Florida  
 Kupin, Michael Barry, B.A. (Cornell University), Yonkers, New York  
 Kursman, Stephen David, B.A. (University of Michigan), West Bloomfield, Michigan  
 Lewis, David Brian, B.A. (Capital University), Ashland, Ohio  
 Lewis, Mark Alan, B.A. (Georgetown University), Denver, Colorado  
 Li, David Yuan, B.S. (Georgetown University), Oakland, California  
 Libson, Jeffrey Paul, B.A. (Oberlin College), Chapel Hill, North Carolina  
 Lieberman, Michael Lee, B.A. (University of Michigan), Dayton, Ohio  
 Lovett, Walter Marvin, Jr., B.A., M.A. (Emory University), Atlanta, Georgia  
 Madans, Alan Scott, B.A. (Northwestern University), Brooklyn, New York  
 Maniace, James Vernon, B.A. (University of Notre Dame), Columbus, Ohio  
 Martin, Joanne Denise, B.A. (Southern Methodist University), Chesterfield, Missouri  
 May, Melissa Macleod, B.A. (Denison University), East Aurora, New York  
 Mayans, Steven Anthony, B.A. (Vanderbilt University), Cincinnati, Ohio  
 McIntosh, Jean Marie, B.A. (Emory University), Mobile, Alabama  
 Melchionni, Gary Dennis, B.A. (Duke University), Woodbury, New Jersey  
 Merkle, Craig Benton, B.A. (Western Maryland College), Woodstock, Maryland  
 Milakovic, John George, B.A. (Dickinson College), Steelton, Pennsylvania  
 Miller, David Clayton, B.A. (Newberry College), Maryville, Tennessee  
 Miller, Max Alan, B.A. (Ashland College), Millersburg, Ohio  
 Miller, Michele, A.B. (Duke University), El Paso, Texas  
 Moore, William Everett, B.A. (University of Florida), Hickam Air Force Base, Hawaii  
 Murdock, John Earl, B.S. (Vanderbilt University), Memphis, Tennessee  
 Nash, David Edward, B.A. (Wake Forest University), Rocky River, Ohio  
 Pedranghelu, John Paul, B.A. (Hofstra University), Hicksville, New York  
 Peters, Susan Lynn, B.A. (Valparaiso University), Wauwatosa, Wisconsin  
 Phillips, Gail M., B.A. (Spelman College), Rocky Mount, North Carolina  
 Pisaneschi, Janet Ellen, B.A. (Clemson University), Baltimore, Maryland  
 Poole, John Samuel, B.A. (University of Kentucky), Louisville, Kentucky  
 Pope, James Arthur, B.A. (University of North Carolina at Chapel Hill), Raleigh, North Carolina  
 Potel, David Howard, B.A. (State University of New York at Binghamton), Yonkers, New York  
 Potter, Elizabeth Page, M. Phil. (University of Vienna), Winston-Salem, North Carolina  
 Poulton, Jennifer Anne, B.A. (Skidmore College), Columbus, Ohio  
 Press, Robert Paul, B.A. (Seattle University), Seattle, Washington  
 Puckett, Robin Ann, B.A. (University of North Carolina at Chapel Hill), Sumter, South Carolina  
 Reardon, Abigail Teresa, B.A. (College of the Holy Cross), Garden City, New York  
 Remus, Margarita Rosa, B.A. (Rice University), Lake Charles, Louisiana  
 Rendall, Donald James, Jr., B.A. (Dartmouth College), Lakewood, New York  
 Resk, Terry Ellen, B.S. (Florida State University), West Palm Beach, Florida  
 Richardson, William Kahelelani, B.A. (University of California at Santa Barbara), Honolulu, Hawaii  
 Richelo, Thomas, B.A. (Duke University), Bloomfield, New Jersey  
 Richter, Stephen William, B.A. (Wheaton College), Havertown, Pennsylvania  
 Rising, Gail Elizabeth, B.A. (Union College), Durham, North Carolina  
 Roepke, Stephen Allen, B.A. (Bowling Green State University), Ashland, Ohio  
 Rose, Leo, III, B.A. (University of Pennsylvania), Miami Beach, Florida  
 Rutledge, Joyce S., A.B. (Goucher College), M.A., Ph.D. (Johns Hopkins University), Baltimore, Maryland  
 Ryan, Mark William, B.A. (Syracuse University), Batavia, New York

Saul, Bruce Howard, B.A. (Johns Hopkins University), Bethesda, Maryland  
 Schochet, Ira Alan, B.A. (State University of New York at Binghamton), Brooklyn, New York  
 Schrader, Russell William, B.A. (Wake Forest University), Montgomery, Ohio  
 Schwartz, James Evan, B.A. (University of Pennsylvania), Ardsley, New York  
 Schwartz, Michael, B.S. (Virginia Military Institute), Durham, North Carolina  
 Seawright, Robert Paul, B.A. (State University of New York at Fredonia), Fredonia, New York  
 Sebo, Katherine Hagen, B.A. (Oberlin College), Ph.D. (American University), Greensboro, North Carolina  
 Sheer, Alain Herbert, B.A. (Muhlenberg College), M.A., Ph.D. (Duke University), Athens, Georgia  
 Sherback, Richard John, B.A. (Merrimack College), Watertown, Massachusetts  
 Shingleton, Arthur Bradley, B.A. (Dickinson College), Durham, North Carolina  
 Silverman, Pamela Kaye, B.S. (Brown University), Durham, North Carolina  
 Smith, Alfred George, B.A. (St. Lawrence University), Coral Gables, Florida  
 Smith, Brian William, B.A. (State University of New York at Buffalo), Huntington, New York  
 Stark, Thomas Haywood, B.A. (Duke University), Raleigh, North Carolina  
 Stohler, David Charles, B.A. (Muhlenberg College), Harrisburg, Pennsylvania  
 Stoner, William Edward, B.S. (Wittenberg University), Rockford, Illinois  
 Strouse, Richard Lee, B.A. (Bucknell University), York, Pennsylvania  
 Sturgess, David Elliott, B.A. (University of Connecticut), Branford, Connecticut  
 Sumter, Geraldine, B.A. (Howard University), Columbia, South Carolina  
 Swann, Paul Ernest, B.A. (Harvard College), Villanova, Pennsylvania  
 Swinton, David Moine, B.A. (University of Iowa), Urbandale, Iowa  
 Tarshes, David Curtis, B.S. (Indiana University), Zionsville, Indiana  
 Tiryakian, Edmund Carlos, B.A. (Princeton University), Durham, North Carolina  
 Tucker, Linda Weinstein, B.S. (University of Maryland), Bethesda, Maryland  
 Tucker, Neil Robert, B.A. (Brandeis University), Whitestone, New York  
 Useted, Robert Allen, B.A. (Southeast Missouri State University), Manchester, Missouri  
 Uttaro, Ralph Anthony, B.A. (St. Bonaventure University), Brooklyn, New York  
 Vernon, Robert Bruce, B.A., Ph.D. (Brown University), Raleigh, North Carolina  
 Vezina, William Robert, III, B.A. (University of Central Florida), Orlando, Florida  
 Vornholt, Richard Palmer, B.S. (Bowling Green State University), Marion, Ohio  
 Walker, Irene Childress, B.A. (Rice University), Nashville, Tennessee  
 Walter, Robert William, B.S. (Colorado State University), Denver, Colorado  
 Ward, Michael Lesley, B.S. (State University of New York at Binghamton), Dix Hills, New York  
 Ward, William Ellis, B.A. (Emory University), Wilmington, Delaware  
 Warhit, Barry Elias, B.S. (Wharton School of the University of Pennsylvania), Eastchester, New York  
 Watson, Blake Andrew, B.A. (Vanderbilt University), Robinson, Illinois  
 West, Cynthia Wittmer, B.A. (University of North Carolina at Chapel Hill), Raleigh, North Carolina  
 White, Bryan Stanford, B.A. (University of California at Berkeley), Orange, California  
 Wilkinson, Kevin David, B. (University of Connecticut), Quaker Hill, Connecticut  
 Wineland, Teresa Maria, B.A. (University of Arkansas), Pine Bluff, Arkansas  
 Wittenstein, David Joel, B.A. (Haverford College), Atlanta, Georgia  
 Wolff, Jeffrey Stephen, B.J. (University of Missouri), Creve Coeur, Missouri  
 Woodland, Beth Hope, B.A. (Tufts University), Columbia, Maryland  
 Wright, Peter George, B.A. (Duke University), Woodbridge, Virginia  
 Yates, John Charles, B.A. (Duke University), Charlotte, North Carolina  
 Yeutter, Gregg Steven, B.A. (Nebraska Wesleyan University), Lincoln, Nebraska  
 Young, Michael Richard, B.A. (Allegheny College), Haddonfield, New Jersey  
 Zeidman, Steven Mark, B.A. (State University of New York at Albany), Westport, Connecticut

## Second-Year Class (Class of 1980)

Acheson, Edwin Robert, Jr., B.S. (University of Missouri at Columbia), Ballwin, Missouri  
 Addison, Daniel David, B.A. (State University of New York at Binghamton), Washington, D.C.  
 Amadeo, Nat Salvatore, A.B. (University of Notre Dame), Bayonne, New Jersey  
 Bagley, Roger Jacob, B.S. (Haverford College), Woodbury, New York  
 Baldwin, Carlos Mark, B.A. (University of North Carolina at Chapel Hill), Kannapolis, North Carolina  
 Barr, Kim James, B.S. (University of North Carolina at Chapel Hill), West Jefferson, North Carolina  
 Barrett, Margreth, B.A., M.A. (University of South Florida), Pensacola, Florida  
 Beatrice, Mark Alan, B.A. (Adrian College), East Palestine, Ohio—A.M. in Public Policy Sciences—J.D. Joint Degree Program  
 Benfer, James R., Jr., A.B. (University of California at Los Angeles), Rolling Hills, California  
 Beutenmuller, Rudolf William, B.A. (Princeton University), Creve Coeur, Missouri  
 Bickal, Ellen Jane, B.A. (Wellesley College), Lawrenceville, New Jersey  
 Biloon, Diane Rose, B.A. (University of Rochester), North Tarrytown, New York  
 Blackburn, James Breckenridge, III, B.A. (Princeton University), Grosse Pointe, Michigan



Blazer, Lawrence Craig, A.B. (Stanford University), Los Angeles, California  
 Blongewicz, Mark Kimball, B.S. in Education (University of Nebraska at Lincoln), Omaha, Nebraska  
 Bonner, R. Lawrence, B.A. (University of Notre Dame), Fort Lauderdale, Florida  
 Bowling, Daniel Seymour, III, B.A. (Millsaps College), Brookhaven, Mississippi  
 Boyles, Carol Frances, B.A. (Duke University), Hickory, North Carolina  
 Brenner, Sally Beth, B.A. (Southern Methodist University), Winston-Salem, North Carolina  
 Brooks, Craig Martin, B.S. (University of Pennsylvania), Havertown, Pennsylvania  
 Brown, Glenn William, Jr., B.S. (Massachusetts Institute of Technology), Waynesville, North Carolina  
 Brown, James Olney, B.A. (Wheaton College), Storm Lake, Iowa  
 Burrows, Randall Allan, A.B. (University of California at Berkeley), Yuba City, California  
 Butler, Julia Hampton, B.B.A. (University of Georgia), Savannah, Georgia  
 Butner, Blain Byerly, A.B. (Davidson College), Winston-Salem, North Carolina  
 Carson, Robert Allan, B.S. (University of Illinois), Cary, North Carolina  
 Casselman, Robert Elliott, B.S. (Northern Arizona University), Paradise Valley, Arizona  
 Chadwick, James Martin, B.A. (Duke University), St. Petersburg, Florida  
 Chartove, Alex Peter, B.A. (Brandeis University), Mount Kisco, New York  
 Cicerio, Gale Marie, B.A. (Sophie Newcomb College of Tulane University), Fort Lauderdale, Florida  
 Citrynell, Kyle Anne, B.A. (Duke University), Bellmore, New York  
 Clain, Neil Peter, Jr., B.A. (University of Florida), Daytona Beach, Florida  
 Cole, Robert Raymond, A.B. (Whitman College), Stanwood, Washington  
 Creel, Philip Michael, B.A. (Virginia Polytechnic Institute), Sulphur Springs, West Virginia  
 Crocker, John Lawrence, A.B. (Yale University), M.A., Ph.D. (Harvard University), Chapel Hill, North Carolina  
 Crouse, James Teague, B.A. (Davidson College), Lexington, North Carolina  
 Dacus, Rhett Kermit, B.A. (Concordia College), Denver, Colorado  
 DeHaven, Dara Lyn, B.A., M.A. (Duke University), Carrollton, Georgia  
 Dillman, Howard Dale, B.S. (Kent State University), Lima, Ohio  
 DiVenere, Thomas Matthew, A.B. (Holy Cross College), Bristol, Connecticut  
 Dreifus, David, B.A. (Tufts University), Memphis, Tennessee  
 Dyer, James Alan, B.A. (Duke University), Cincinnati, Ohio  
 Dyer, John Scott, B.A. (Cornell University), Brookside, New Jersey  
 Dym, Lori Joan, B.A. (Emory University), Toms River, New Jersey  
 Ellis, Rose Allen, A.B. (Williams College), Tulsa, Oklahoma  
 Fabricius, Scott Douglas, B.A. (Wheaton College), Clarendon Hills, Illinois  
 Fieber, James Albert, B.A. (Williams College), Stamford, Connecticut  
 Finan, William John, B.A. (Eisenhower College), Goshen, New York  
 Ford, Ann Katherine, B.A. (Georgetown University), Shaker Heights, Ohio  
 Forlines, John Arthur, III, B.A. (Duke University), Granite Falls, North Carolina  
 Foster, Tompkins Augustus, A.B. (Davidson College), Clermont, Florida  
 George, Barry Alan, B.A. (Franklin and Marshall College), Doylestown, Pennsylvania  
 Gibling, Stephen Quinn, B.A. (Washington and Lee University), Baltimore, Maryland  
 Giegerich, Thomas William, B.A. (Fordham University), Bronx, New York  
 Glancy, John Edward, A.B. (Franklin and Marshall College), Glenside, Pennsylvania  
 Goodale, Robert Dudley, A.B. (University of Michigan), Bloomfield Hills, Michigan  
 Goode, Shirley Fulton, B.S. (North Carolina A & T State University), Chapel Hill, North Carolina  
 Gordon, Gregory Mark, A.B. (Muhlenberg College), Drexel Hill, Pennsylvania  
 Grant, Carol Renshaw, B.S. (University of Alabama), Birmingham, Alabama  
 Griffey, Linda Boyd, B.S. (University of Iowa), Keokuk, Iowa  
 Hall, Michael Leo, B.A. (Catholic University), Birmingham, Alabama  
 Halperin, Robert Mark, B.A. (Harvard University), Swampscott, Massachusetts—A.M. in Public Policy Sciences—J.D. Joint Degree Program  
 Harris, Genevieve Ann, B.A. (Tulane University), New Orleans, Louisiana  
 Haskell, Grant Pickens, B.A. (Amherst College), Westport, Connecticut  
 Hauge, Richard Andrew, B.S. (University of Delaware), Wilmington, Delaware  
 Herndon, Randolph Karl, B.A. (Duke University), Wilmington, Delaware  
 Hickey, John Heyward, B.A. (Florida State University), Miami, Florida  
 Hillowe, Bruce V., B.A. (State University of New York at Binghamton), Massapequa, New York  
 Holdcroft, James Patrick, Jr., B.A. (Amherst College), Pittsburgh, Pennsylvania  
 Holden, Michael John, B.A. (University of Michigan), Sheboygan, Wisconsin  
 Holliday, Katherine Street, B.A. (Wake Forest University), M.Ed. (University of North Carolina at Charlotte), Charlotte, North Carolina  
 Holshouser, Eric James, A.B., M.A. (University of Illinois), Urbana, Illinois  
 Horton, Ricky Dale, B.S. (North Carolina State University), Concord, North Carolina  
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# Calendar of the Divinity School

1979

<b>August</b>	
29	Wednesday—Orientation for new students begins
30	Thursday—Orientation continues
31	Friday, 9:00 A.M. to 12:00 noon—Registration of all new students; registration changes for returning students
<b>September</b>	
4	Tuesday, 8:20 A.M.—Fall semester classes begin
4	Tuesday—Drop/add period begins
4	Tuesday—7:30 P.M. Divinity School opening convocation
14	Friday—Drop/add period ends 12:00 noon
<b>October</b>	
19	Friday—Fall recess begins 5:00 P.M.
22-24	Monday-Wednesday—Divinity School convocation and pastors' school with Gray Lectures
29	Monday—Classes resume
31	Wednesday—Registration for spring semester, 1980
<b>November</b>	
22-23	Thursday-Friday—Thanksgiving recess
26	Monday—Classes resume
<b>December</b>	
11	Tuesday—Fall semester classes end
12-13	Wednesday-Thursday—Reading period
14	Friday—Final examinations begin
21	Friday—Final examinations end

1980

<b>January</b>	
10	Thursday—Orientation for new students
11	Friday—Registration for new students; registration changes for returning students
14	Monday—Spring semester classes begin
14	Monday—Drop/add period begins
25	Friday—Drop/add period ends
<b>March</b>	
7	Friday—Spring recess begins 5:00 P.M.
17	Monday—Spring recess ends
26	Wednesday—Registration for fall semester, 1980
<b>April</b>	
4-7	Friday-Monday—Easter recess
25	Friday—Spring semester classes end
28	Monday—Reading period
29	Tuesday—Final examinations begin
<b>May</b>	
5	Monday—Final examinations end
10	Saturday, 3:00 P.M.—University baccalaureate service
10	Saturday, 7:00 P.M.—Divinity School baccalaureate service
11	Sunday, 3:00 P.M.—Commencement exercises

# University Administration

## GENERAL ADMINISTRATION

Terry Sanford, J.D., LL.D., D.H., L.H.D., D.P.A., *President*  
A. Kenneth Pye, LL.M., *Chancellor*  
William Bevan, Ph.D., *Provost*  
Charles B. Huestis, *Vice-President for Business and Finance*  
William G. Anlyan, M.D., D.Sc., *Vice-President for Health Affairs*  
Eugene J. McDonald, LL.M., *Vice-President for Government Relations and University Counsel*  
Stephen Cannada Harward, A.B., C.P.A., *Treasurer and Assistant Secretary*  
J. Peyton Fuller, A.B., *Assistant Vice-President and Corporate Controller*  
Rufus H. Powell, LL.B., *Secretary of the University*  
Harold W. Lewis, Ph.D., *Vice-Provost and Dean of the Faculty*  
John C. McKinney, Ph.D., *Vice-Provost and Dean of the Graduate School*  
John M. Fein, Ph.D., *Vice-Provost and Dean of Trinity College of Arts and Sciences*  
Ewald W. Busse, M.D., Sc.D., *Associate Provost and Dean of Medical and Allied Health Education*  
Roscoe R. Robinson, M.D., *Associate Vice-President for Health Affairs and Chief Executive Officer of Duke Hospital*  
Frederick C. Joerg, M.B.A., *Assistant Provost for Academic Administration*  
Anne Flowers, Ed.D., *Assistant Provost for Educational Program Development*  
William J. Griffith, A.B., *Assistant Provost and Dean of Student Affairs*  
Clark R. Cahow, Ph.D., *Assistant Provost and University Registrar*  
Caroline L. Lattimore, Ph.D., *Assistant Provost and Dean of Minority Affairs*  
Richard L. Wells, Ph.D., *Assistant Provost and Associate Dean of Trinity College of Arts and Sciences*  
Joel L. Fleishman, LL.M., *Vice-Chancellor for Public Policy Education and Research; Director of the Institute for Policy Sciences and Public Affairs*  
Mel Ray, M.B.A., *Vice-Chancellor for Data Processing*  
Connie R. Dunlap, A.M.L.S., *University Librarian*  
William E. King, Ph.D., *University Archivist*  
Robert N. Sawyer, Ed.D., *University Educational Planning Officer and Director of Summer Educational Programs*

## DIVINITY SCHOOL EDUCATIONAL ADMINISTRATION

Thomas A. Langford (1956), B.D., Ph.D., D.D., *Dean of the Divinity School*  
Creighton Lacy (1953), B.D., Ph.D., *Associate Dean for Curricular Affairs*  
John K. Bergland (1973), M.Div., D.D., *Associate Dean for External Affairs*  
B. Maurice Ritchie (1973), B.D., *Assistant Dean for Field Education and Student Services*  
Clara S. Godwin (1969), *Administrative Assistant for General Administration and Finance*  
Lawrence E. Johnson (1979), M.Div., D.Min., *Director of Black Church Affairs*  
Sue Anne Morrow (1977), M.Div., *Director of Admissions and Student Affairs*

## Division of Special Programs

Dennis M. Campbell (1979), B.D., Ph.D., *Director of Continuing Education*  
John C. Detwiler (1966), B.D., Th.M., *Director of Clinical Pastoral Education*  
Richard A. Goodling (1959), B.D., Ph.D., *Director of Programs in Pastoral Psychology*  
Robert L. Wilson (1970), B.D., Ph.D., *Director, J. M. Ormond Center for Research, Planning, and Development*

## Division of Advanced Studies

Waldo Beach (1946), B.D., Ph.D., *Supervisor of the Master of Theology Program*  
Dwight Moody Smith, Jr., (1965), B.D., Ph.D., *Director of Graduate Studies in Religion*

## Library

Donn Michael Farris (1959), M.Div., M.S. in L.S., *Librarian*  
Harriet V. Leonard (1960), M.Div., M.S. in L.S., *Reference Librarian*  
Katherine L. Dixon, A.B., M.A., *Circulation Librarian*  
Linda Gard, A.B., M.Div., *Assistant Circulation Librarian*  
Betty Walker, B.A., *Assistant to the Librarian*

## SECRETARIAL STAFF

Anita Gail Chappell, *Faculty Secretary*  
Mary P. Chestnut, *Faculty Secretary*  
Anne C. Daniels, *Secretary to the Director of the J. M. Ormond Center for Research, Planning, and Development and Faculty Secretary*  
Sarah Freedman, *Faculty Secretary*  
Patricia M. Haugg, *Secretary to the Director of Graduate Studies in Religion*



Maxie B. Honeycutt, *Administrative Secretary for Student Financial Aid*  
 Norma J. Johnson, *Faculty Secretary and Secretary to the Director of Black Church Affairs*  
 Minnie G. Jones, *Secretary to the Director of Admissions and Faculty Secretary*  
 Anne Kellam, *Faculty Secretary*  
 Patsy E. Martin, *Secretary to the Director of Continuing Education and Faculty Secretary*  
 Margie M. Meeler, *Secretary to the Director of Field Education*  
 Jacquelyn P. Norris, *Secretary to the Director of Programs in Pastoral Psychology and Faculty Secretary*  
 Frances D. Parrish, *Administrative Secretary, Office of the Dean*  
 Stephanie Pettus, *Secretary to the Director of Admissions and Student Affairs*  
 Marie Smith, *Secretary to the Associate Dean for External Affairs and Faculty Secretary*  
 Mary C. Tilley, *Administrative Secretary, Registry*

## FACULTY

- Lloyd Richard Bailey (1971), B.D., Ph.D., *Associate Professor of Old Testament*  
 \*Frank Baker (1960), B.D., Ph.D., *Professor of English Church History*  
 Waldo Beach (1946), B.D., Ph.D., *Professor of Christian Ethics*  
 William David Davies (1966), M.A., D.D., F.B.A., D.Litt., *George Washington Ivey Professor of Advanced Studies and Research in Christian Origins*  
 \*\*Herbert O. Edwards (1974), S.T.B., Ph.D., *Associate Professor of Black Church Studies*  
 James Michael Efrid (1962), B.D., Ph.D., *Associate Professor of Biblical Languages and Interpretation*  
 Donn Michael Farris (1950), M.Div., M.S. in L.S., *Professor of Theological Bibliography*  
 Richard A. Goodling (1959), B.D., Ph.D., *Professor of Pastoral Psychology*  
 Robert Clark Gregg (1974), S.T.B., Ph.D., *Associate Professor of Patristics and Medieval Church History*  
 †Stuart C. Henry (1959), B.D., Ph.D., *Professor of American Christianity*  
 Frederick Herzog (1960), Th.D., *Professor of Systematic Theology*  
 Osmond Kelly Ingram (1959), B.D., *Professor of Parish Ministry*  
 Creighton Lacy (1953), B.D., Ph.D., *Professor of World Christianity*  
 Thomas A. Langford (1956), B.D., Ph.D., D.D., *Professor of Systematic Theology*  
 Richard Lischer (1979), M.A., B.D., Ph.D., *Assistant Professor of Homiletics*  
 Paul A. Mickey (1970), B.D., Ph.D., *Associate Professor of Pastoral Theology*  
 Roland E. Murphy (1971), M.A., S.T.D., S.S.L., *Professor of Old Testament*  
 C. G. Newsome (1978), M.Div., *Instructor in American Christianity*  
 Jill Raitt (1973), Ph.D., *Associate Professor of Historical Theology*  
 McMurry S. Richey (1954), B.D., Ph.D., *Professor of Theology and Christian Nurture*  
 Charles K. Robinson (1961), B.D., Ph.D., *Associate Professor of Philosophical Theology*  
 Dwight Moody Smith, Jr. (1965), B.D., Ph.D., *Professor of New Testament Interpretation*  
 Harmon L. Smith (1962), B.D., Ph.D., *Professor of Moral Theology*  
 David Curtis Steinmetz (1971), B.D., Th.D., *Professor of Church History and Doctrine*  
 John H. Westerhoff III (1974), M.Div., Ed.D., *Professor of Religion and Education*  
 William H. Willimon (1976), M.Div., S.T.D., *Assistant Professor of Worship and Liturgy*  
 Robert L. Wilson (1970), B.D., Ph.D., *Research Professor of Church and Society*  
 ‡Franklin Woodrow Young (1968), B.D., Ph.D., *Amos Ragan Kearns Professor of New Testament and Patristic Studies*

## FACULTY, DEPARTMENT OF RELIGION

(Teachers in graduate program in religion whose courses are open to Divinity School students.)

- Kalman Bland (1973), Ph.D., *Associate Professor of Judaic Studies*  
 David G. Bradley (1949), Ph.D., *Professor of History of Religions*  
 James H. Charlesworth (1969), B.D., Ph.D., *Associate Professor of New Testament*  
 Roger Corless (1970), Ph.D., *Associate Professor of History of Religions*  
 Wesley A. Kort (1965), Ph.D., *Professor of Religion and Literature*  
 Bruce B. Lawrence (1971), Ph.D., *Associate Professor of History of Religions*  
 C. Eric Lincoln (1976), Ph.D., *Professor of Sociology of Religion*  
 Charles H. Long (1974), Ph.D., *Professor of History of Religions*  
 Eric M. Meyers (1969), Ph.D., *Associate Professor of Judaic Studies*  
 Robert T. Osborn (1954), Ph.D., *Professor of Theology*  
 Harry B. Partin (1964), Ph.D., *Associate Professor of History of Religions*  
 William H. Poteat (1960), Ph.D., *Professor of Religion and Culture*

\*Sabbatical leave, spring semester, 1980.

\*\*Leave of absence, 1979-80.

†Sabbatical leave, 1979-80.

‡Sabbatical leave, fall semester, 1979.

James L. Price (1952), Ph.D., *Professor of New Testament*  
Orval Wintermute (1958), Ph.D., *Professor of Old Testament*

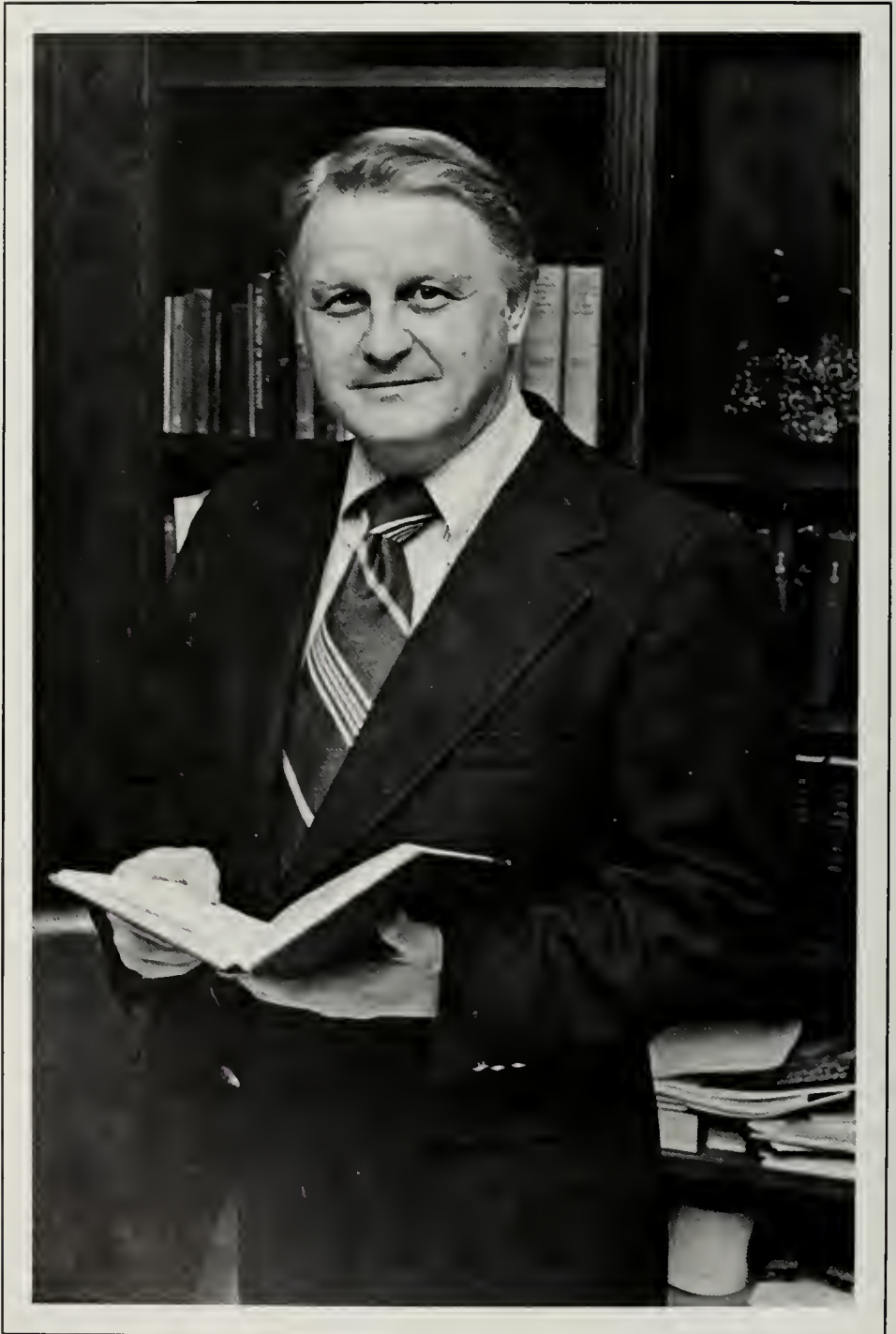
## RELATED FACULTY

John K. Bergland (1973), M.Div., D.D., *Associate Dean for External Affairs*  
Albert F. Fisher (1974), M.Div., *Adjunct Professor of Parish Work*  
P. Wesley Aitken (1953), B.D., Th.M., *Chaplain Supervisor of Duke Medical Center and Associate in Instruction, the Divinity School*  
John C. Detwiler (1966), B.D., Th.M., *Chaplain Supervisor of Duke Medical Center and Associate in Instruction, the Divinity School*  
Winthrop S. Hudson, B.D., Ph.D., *Associate in Instruction, American Christianity*  
Peter G. Keese (1973), S.T.B., Th.M., *Chaplain Supervisor of Duke Medical Center and Associate in Instruction, the Divinity School*  
Grant Wacker, Ph.D., *Associate in Instruction, American Christianity*  
John Kennedy Hanks (1954), M.A., *Lecturer in Sacred Music, Director of the Divinity School Choir, and Professor of Music at Duke University*

## EMERITI

Kenneth Willis Clark (1931), B.D., Ph.D., D.D., *Professor Emeritus of New Testament and Codirector of the International Greek New Testament Project*  
Robert Earl Cushman (1945), B.D., Ph.D., Litt.D., *Research Professor Emeritus of Systematic Theology*  
William Arthur Kale (1952), B.D., D.D., *Professor Emeritus of Christian Education*  
Hiram Earl Myers (1926), S.T.M., D.D., *Professor Emeritus of Biblical Literature*  
M. Wilson Nesbitt (1958), B.D., D.D., *Adjunct Professor Emeritus of the Work of the Rural Church*  
Ray C. Petry (1937), Ph.D., LL.D., *James B. Duke Professor Emeritus of Church History*  
John Jesse Rudin II (1945), B.D., Ph.D., *Associate Professor Emeritus of Liturgy and Worship*  
H. Shelton Smith (1931), Ph.D., D.D., Litt.D., *James B. Duke Professor Emeritus of American Religious Thought*  
William Franklin Stinespring (1936), Ph.D., *Professor Emeritus of Old Testament and Semitics*  
Arley John Walton (1948), B.S.L., D.D., *Professor Emeritus of Church Administration and Director of Field Work*

# General Information



## History

Duke University as it exists today developed from simple beginnings. Established in 1838, Union Institute became a normal college by 1851 and in 1859 was renamed Trinity College. In 1892 the college moved to Durham, North Carolina.

In 1924 James B. Duke established a trust fund for educational and charitable purposes. The chief beneficiary was Trinity College, which became Duke University. The purpose for establishing the trust was very clear: "I have selected Duke University as one of the principal objects of this trust because I recognize that education, when conducted along sane and practical, as opposed to dogmatic and theoretical lines, is, next to religion, the greatest civilizing influence . . . . And I advise that the courses at this institution be arranged, first, with special reference to the training of preachers, teachers, lawyers, and physicians, because these are most in the public eye, and by precept and example can do most to uplift mankind . . . ." The School of Religion began its work in the academic year 1926-27, and formal exercises for its opening were held on 9 November 1926. In 1940 the name was changed to the Divinity School.

During its history the Divinity School has had outstanding teachers, scholars, and administrative leaders,\* and its graduates have distinguished themselves by making significant contributions to the church and the world. In 1964 a program of expansion was begun, culminating in February 1972, when the Divinity School doubled its physical facilities and moved into a handsome new building.

## The Role of the Divinity School

The Divinity School represents theological inquiry and learning within the greater University. By history and indenture, it stands within the Christian tradition and recognizes its distinctive lineage in, as well as its continuing obligation to, the United Methodist Church. The Divinity School, although United Methodist in tradition and dependency, receives students from many Christian denominations and offers its educational resources to representatives of the several communions who seek an education for a church-related ministry. From its

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\*Since the institution of the School in 1926, the following persons have served as Deans or Acting Deans: Edmund Davidson Soper, 1926-28; Elbert Russell, 1928-41; Paul Neff Garber, 1941-44; Harvie Branscomb, 1944-46; Gilbert T. Rowe, Acting Dean of the faculty, 1946-47; Paul E. Root (elected in 1947 but died before assuming office); Harold A. Bosley; 1947-50; James Cannon III, Acting Dean 1950-51, Dean 1951-58; Robert Earl Cushman, 1958-71; Thomas A. Langford, since 1971.



inception, it has been ecumenical in aspiration, teaching, and practice, as well as in its faculty. Educational policy has consistently aspired to foster a Christian understanding "truly catholic, truly evangelical, and truly reformed."

The principal purpose of the Divinity School is the professional education for the ministry, which in today's world is manifested in a variety of forms. Provision to implement these increasing variations of ministry is a part of the School's curricular resources.

Although the conventional and inherited styles of ministry are now undergoing change, the Divinity School curriculum continues to prepare students for informed and discriminating discharge of the historic offices of church and congregation through the ministry of word and sacrament, pastoral care, and teaching. The Divinity School believes these offices will remain, although the form and context of the local church may change.

With this in mind, the Divinity School tries to prepare students for the mature performance of their vocation. It hopes to develop in each student a disciplined intelligence, informed by sound learning and equipped for worthy professional service. The resources are offered to students with a diversity of ministerial aims, although the School seeks, by recruitment and financial support, to prepare persons for ordination or lay professional vocations in the churches. This is regarded as a service to the Church, to the world, and primarily to the Lord of the Church.

## The Relation of the Divinity School to Duke University

The Divinity School is an integral part of the University and shares fully in its activities, privileges, and responsibilities. The Sunday services in the University Chapel give Divinity School students each year an opportunity to hear several of the country's leading ministers. The University libraries make a rich collection of books and other materials easily accessible. Without paying additional fees, selected courses in the graduate and professional schools are open to Divinity School students, as well as the general, cultural, and recreational resources of the University.





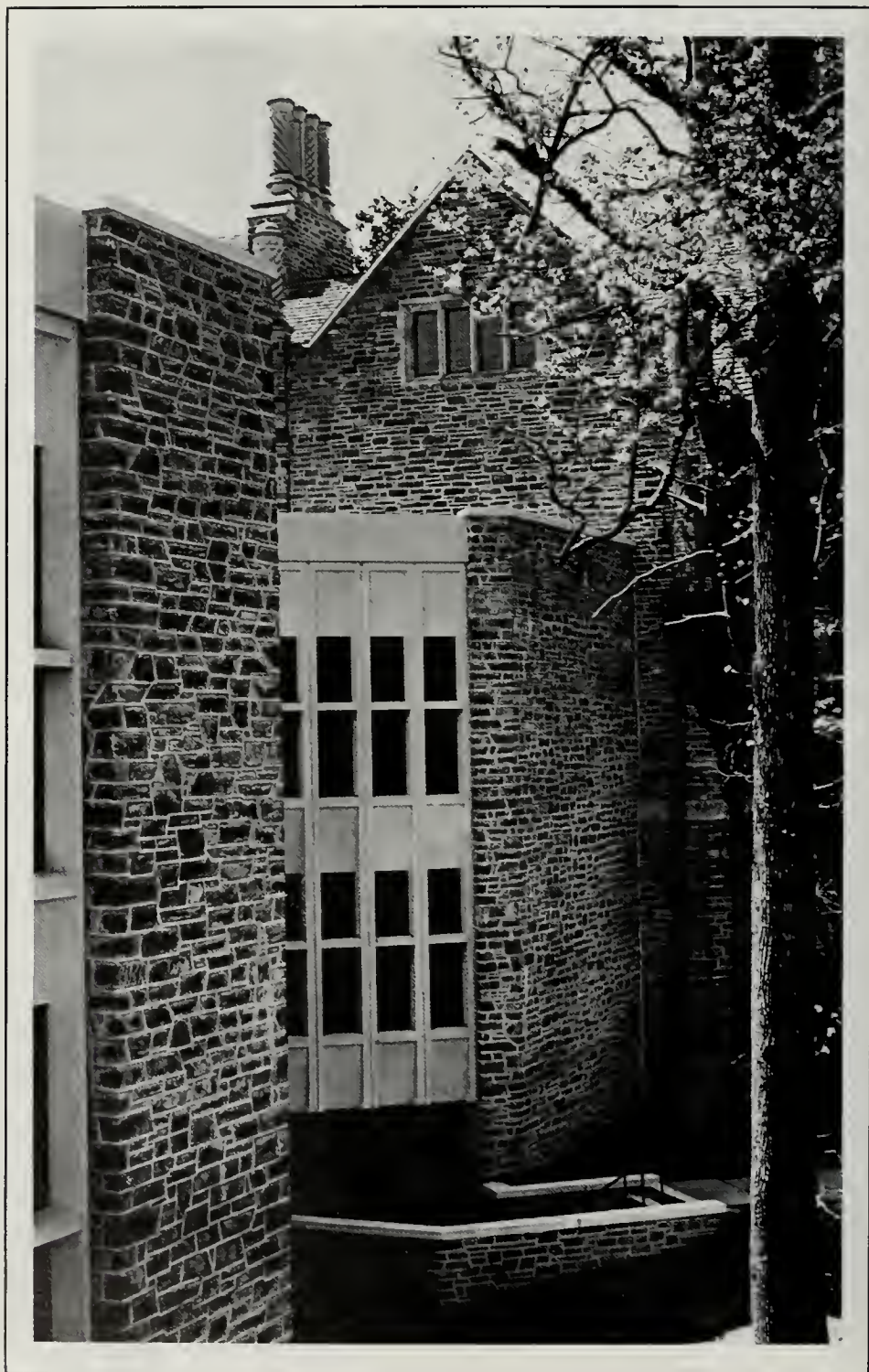
## Library Resources

**Divinity School Library.** The Divinity School Library contains a collection of more than 185,000 volumes in the field of religion and related disciplines and affords an unusual wealth of material for the seminary student. Although an integral part of the University's nine-unit library system, which possesses more than 2,600,000 volumes, the Divinity School Library has its own separate facilities in the Divinity School Building. Its book collection is operated on the open stack system, and its reading rooms provide study facilities for students, space for the special reference collection in religion, and for the more than 600 religious periodicals to which the library currently subscribes.

Staffed by a librarian and a reference librarian trained in theology as well as library administration, by a circulation staff of two persons, and by a number of student assistants, the Divinity School Library offers a variety of reference services to assist the student in selecting and locating materials. The staff, in cooperation with the faculty, maintains a book and periodical collection to support basic courses and advanced research in all major fields of religious studies.

The Divinity School Library is adjacent to the Perkins Library. The seminary student may use the resources and facilities of the Perkins Library, some of which include manuscripts, archives, public documents, newspapers, periodicals, microfilms, maps, rare materials (among which are sixty prized ancient Greek manuscripts), and reference assistance. There is a provision for borrowing books from the libraries of the University of North Carolina and other neighboring institutions.

# Admissions





## Requirements and Procedures

The Divinity School is a fully accredited member of the Association of Theological Schools and is one of thirteen accredited seminaries of the United Methodist Church. It considers candidates for admission who hold an A.B. degree, or its equivalent, from a college approved by a regional accrediting body.

**Preseminary Curriculum.** The Divinity School follows the guidelines of the Association of Theological Schools with respect to undergraduate preparation for theological study. In general, this means a strong background in liberal arts, especially the humanities. A well-rounded background in English language and literature, history, philosophy, psychology, religion, social science, and foreign languages is especially desirable.

**Application Procedures.** Application forms secured from the admissions office should be filed six to twelve months in advance of the intended date of enrollment. Ordinarily, no application for a degree program will be accepted after 1 June and 1 November for September and January enrollments, respectively. Applicants who live within approximately 300 miles of Durham will be required to come for on-campus visits and interviews prior to final admission. A *minimum* of thirty days is required to process any application for a degree program.

Applications from international students will be considered individually. Generally no distinctions are made in admission requirements between international and domestic students. Students from abroad must complete in writing all financial arrangements for study in the United States prior to final admission by the Admissions Committee.

Graduates of unaccredited senior colleges and universities may apply for admission but will be admitted only on a Limited Program basis.

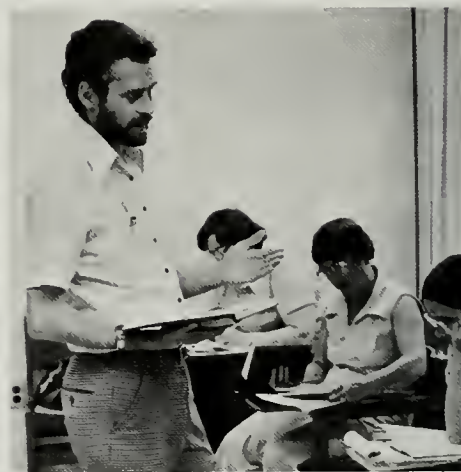
**Admission Requirements.** Those persons are encouraged to apply:

1. who have or will have been awarded a bachelor's degree from an accredited college or university prior to their intended date of enrollment;
2. who have attained at least an overall B- (2.65 on 4.0 scale) academic average; and
3. who are committed to some form of ordained or lay ministry.

Applicants are evaluated on the basis of academic attainment, future promise for ministry, and vocational clarity and commitment.

**Admission on Limited Program.** Limited Program is a special relation between the school and the student, designed to encourage and support academic





achievement. Students may be admitted on Limited Program for a number of reasons including an undergraduate degree in a program other than liberal arts, an undergraduate degree from a non-accredited college, or an undergraduate transcript that does not fully meet Divinity School standards.

Limited Program means reduced schedules of work, with the amount determined by the Associate Dean for Curricular Affairs (ordinarily no more than three courses each of the first two semesters), and also includes a review of work at the end of each semester by the Committee on Academic Standing until Limited Program is lifted.

**Admission as a Special Student.** Special student status may be granted with the approval of the Director of Admissions and the Dean. Particular circumstances must prevail in the case of such admissions. Applications for special student status must be submitted at least thirty days prior to the intended date of enrollment. *Special students are ineligible for any form of financial assistance through the Divinity School.*

**Admission Acceptance.** Applicants are expected to indicate their acceptance of admission within three weeks and to confirm this with the payment of an admission fee of \$30. Upon matriculation, this fee is applied to the first semester tuition charge.

To complete admission students must provide a certificate of immunization and general health to the student health service. The admission office must also receive a final transcript verifying the conferral of the undergraduate degree.

Persons who do not matriculate at the time for which they were originally admitted forfeit admission unless they present a written request for postponement to the Director of Admissions and Student Affairs.

**Transfer of Credit.** Transfer of credit from theological schools accredited by the Association of Theological Schools is allowed by the Divinity School. Credit from another institution will normally be limited to one-third and may not exceed one-half of the total number of credits required for graduation by the Divinity School. In each case a letter of honorable dismissal from the school from which transfer is made is required along with a transcript of academic credits. Applicants for transfer into a degree program are evaluated on the same basis as other applicants.

## Conduct of Students

Duke University expects and will require of all its students continuing loyal cooperation in developing and maintaining high standards of scholarship and conduct. The University wishes to emphasize its policy that all students are subject to the rules and regulations of the University currently in effect, or which are put into effect from time to time by the appropriate authorities of the University. Any student, in accepting admission, indicates willingness to subscribe to and be governed by these rules and regulations and acknowledges the right of the University to take such disciplinary action, including suspension and/or expulsion, as may be deemed appropriate, for failure to abide by such rules and regulations or for conduct adjudged unsatisfactory or detrimental to the University.

The Divinity School expects its students to participate in a communally shared concern for growth in life appropriate to Christian faith and to the dignity of their calling.

### Policy of Nondiscrimination

Duke University does not discriminate on the basis of age, race, color, national and ethnic origin, sex, or handicap, in the administration of educational policies, admission policies, financial aid, employment, or any other University program or activity. Inquiries concerning the University's responsibility may be directed to the Director of Equal Opportunity.

# Community Life



## Corporate Worship

One of the most important aspects of a program of training for Christian life is a vigorous, inspiring, and varied program of participation in corporate worship. This corporate life of the Divinity School is centered in York Chapel where services are held weekly. These services are led by members of the faculty, members of the student body, and guests. Services are voluntary but have been and will continue to be sources of inspiration and strength to the members of the community.

## Living Accommodations

**Residence Hall Accommodations.** Trent Drive Hall, located near the Duke Medical Center, houses graduate and professional school students and undergraduate women. All assignments of graduate students are made on a first-apply, first-assigned basis.

The limited number of single rooms, located in the men's section, are usually reserved by previous occupants for the following academic year. Other rooms are equipped with the following for each student: bed with innerspring mattress, chest with mirror, desk with chair, and book shelving.

**Town House Apartments.** Duke University operates Town House Apartments primarily for graduate and professional school students. Others may be housed if vacancies exist. The setting of these apartments provides single graduate students a comfortable, home-like atmosphere free of all aspects of living inherent to residence halls. Sixteen of the thirty-two air-conditioned apartments are equipped for two students, and the remaining sixteen units are equipped for three students.

**Central Campus Apartments.** Duke University operates a 500-unit housing facility known as Central Campus Apartments. The complex provides basic housing for married graduate students, and single and married students in nondegree allied health programs. Assignments are made on a first-apply, first-assigned basis.

For single students one-bedroom and two-bedroom apartments are fully furnished. The apartments for married students include a few efficiencies and a number of one-, two-, and three-bedroom units in which the kitchen, living room, and first bedroom are basically furnished. These apartments are equipped in such a way as to provide economy and convenience to eligible married students while allowing for individuality.



**Off-Campus Housing.** The Department of Housing Management maintains lists of rental apartments, rooms, and houses provided by Durham property owners or real estate agents who will agree not to discriminate in the rental property because of race, sex, creed, or nationality of a prospective tenant. These lists are available in the central campus office. Off-campus rental properties are not inspected or approved, nor does the University or its agents negotiate with owners for students, faculty, or staff.

**Application Procedures.** When students are informed of their acceptance to the Divinity School, they will also receive a form on which to indicate their preference for University housing. This form should be returned to the Divinity School, where it will be forwarded to the Department of Housing Management. Detailed information on the types of accommodations, and application forms, will be forwarded to the accepted student. However, if additional information is desired prior to a student's acceptance, please write to the Department of Housing Management, Duke University, Durham, North Carolina 27706.

**Food Services.** Food service on both East and West Campus is readily available. The dining facilities on the West Campus include a cafeteria with multiple-choice menus, a service area which includes cafeteria counters as well as a grill, and a table serving dining room, the Oak Room, where full meals and a la carte items are served. The Cambridge Inn, a self-service snack bar, is open throughout the day and evening. Trent Drive Hall has a public cafeteria and Gradeli's, a snack bar/delicatessen, which is open until midnight.

## Student Health

One of the prerequisites for gaining the most from the University experience is a sense of well-being. The aim of the University health service is to provide medical care and health advice necessary to help the student enjoy being a part of the University community. To serve this purpose, both the University health service clinic and the University infirmary are available for student health care needs. A separate fee for this service is assessed.

The main components of the health service include the University health service clinic, located in the Pickens Building on West Campus, and the University infirmary on the East Campus. Emergency transportation, if required, can be obtained from the Duke campus police. Residential staff personnel should be consulted whenever possible for assistance in obtaining emergency treatment.

The facilities of the University health service clinic are available during both regular and summer sessions to all currently enrolled full-time students. The facilities of the University infirmary are available during the regular sessions from the opening of the University in the fall until graduation day in the spring to all currently enrolled full-time students.

Since the student health program does not cover students while away from the Duke campus, it is imperative that student pastors and assistant pastors (winter and/or summer) who are subjected to the hazards of highway travel with great frequency secure complementary health and accident insurance for the full twelve-month period. Students whose course load entitles them to full coverage under the student health program are eligible to secure a complementary insurance policy through the University which provides protection for the entire calendar year. Costs and details of the complementary policy are available from the Director of Admissions and Student Affairs. At the time of registration, a student *must* enroll in this complementary insurance program or sign a waiver of liability statement regarding health care and claims. Students in internship programs carrying less than two courses in any given semester are strongly encouraged to apply for this insurance. Foreign students are required to hold this or another acceptable policy.

The University has made arrangements for a student accident and sickness insurance plan to cover all full-time students for a twelve-month period. For additional fees a student may obtain coverage for a spouse or spouse and child. Although participation in this program is voluntary, the University expects all graduate students to be financially responsible for medical expenses above those covered by the University student health program through the University accident and sickness policy, a private policy, or personal financial resources. Students who have equivalent medical insurance or wish to accept the financial responsibility for any medical expense may elect not to take the Duke plan by signing a statement to this effect. Each full-time student in residence must purchase this student health insurance or indicate the alternative arrangement. The student accident and sickness insurance policy provides protection twenty-four hours per day during the full twelve-month term of the policy for each student insured. Students are covered on and off campus, at home, or while traveling between home and school and during interim vacation periods. Term of the policy is from opening day in the fall. Coverage and services are subject to change each year as deemed necessary by the University in terms of costs and usage.

Married students are expected to be financially responsible for their dependents, providing for hospital, medical, and surgical care, since their dependents are not covered at any time by student health.

The resources of the Duke University Medical Center are available to all Duke students and their spouses and children. Charges for any and all services received from the Medical Center are the responsibility of the student as are the charges for services received from physicians and hospitals not associated with Duke University.

**Counseling and Psychological Services.** CAPS is a component of student services at Duke which was formed in July 1977 by a merger of the former Student Mental Health Service and the former Counseling Center. CAPS' purpose is to provide a comprehensive, coordinated range of counseling and psychological services to assist and promote the personal growth and development of Duke students. These services are available to all enrolled students.

The professional staff is composed of clinical social workers, psychiatrists and psychologists experienced in working with young adults. They provide direct services to students including evaluation and brief counseling/psychotherapy regarding a wide range of concerns. These include issues of self-esteem and identity, family relationships, academic performance, dating, intimacy, and sexual concerns.

This year CAPS will begin offering some small-group experiences focusing on skills development and special interests. These will explore such interests as anxiety reduction, assertiveness training, committed couples, communication skills, etc. Interested students may contact CAPS for further information.

As Duke's center for administration of national testing programs, CAPS also offers a wide variety of graduate/professional school admissions tests and professional licensure and certification examinations. Another function of CAPS is the availability of the staff to the entire University community for consultation and educational activities regarding student development and mental health issues affecting not only individual students but the campus community as a whole. The staff works with campus personnel including administrators, faculty, Student Health Staff, Religious Life Staff and student groups in meeting needs identified through such liaisons. Staff members are available to lead workshops and discussion groups on topics of interest to students.

CAPS maintains a policy of *strict confidentiality* concerning information about each student's contact with the CAPS staff. If a student desires that such information be released to anyone, he or she must give written authorization for such release.

There are no charges for initial evaluation and/or brief counseling or psychotherapy; however, where extended interviews are indicated, a fee commensurate with the student's financial situation will be arranged. If appropriate, referral may be made to other staff members or local resources.

Appointments may be made by calling 684-5100 or coming by the office at 214 Old Chemistry Building, West Campus between 8:00 A.M. and 5:00 P.M. Monday through Friday. If a student's concern needs immediate attention, that should be made known to the secretary and every effort will be made to arrange for the student to talk with a staff member at the earliest possible time.

## Motor Vehicles

Each student possessing or maintaining a motor vehicle at Duke University must register it at the beginning of the academic year in the security office at 2010 Campus Drive. If a motor vehicle is acquired and maintained at Duke University after academic registration, it must be registered within five calendar days after operation on the campuses begins. Resident students are required to pay an annual fee of \$20 for each motor vehicle or \$10 for each two-wheeled motor vehicle. Students first registering after 1 January are required to pay \$14 for a motor vehicle or \$7 for a two-wheeled motor vehicle.

At the time of registration of a motor vehicle, the following documents must be presented: the state vehicle registration certificate, a valid driver's license, and satisfactory evidence of automobile liability insurance coverage with limits of at least \$10,000 per person and \$20,000 per accident for personal injuries, and \$5,000 for property damage, as required by the North Carolina motor vehicle law.

If a motor vehicle or a two-wheeled motor vehicle is removed from the campus permanently and the decal is returned to the traffic office prior to 1 January there will be a refund of \$10 for a motor vehicle and \$5 for a two-wheeled motor vehicle.

## Student Activities and Organizations

In the absence of common living and dining accommodations, community life in the Divinity School centers around a number of organizations and activities. The richness of life prevents more than a very selective listing of activities and organizations.

A primary center for community is a morning chapel service held every Tuesday, Wednesday, and Thursday in York Chapel while school is in session. Faculty and students share joint responsibility for these services.

A number of students find both intimacy and fellowship in one of several informal groups whose major purpose is to provide students with opportunities to express and share personal, professional, and spiritual developments with each other in weekly meetings on the campus and at home.

The Community Life Committee of the Student Representative Assembly annually plans at least six community-wide events for students and faculty. Weekend retreats present students with an opportunity to become better acquainted with each other and with faculty, and to explore matters of personal, professional, or spiritual concern. Dialogues on ministry occurring through the year help introduce students to practicing ministers and their personal, professional, and spiritual struggles and growth.

**The Student Association.** The officers of the Student Association are elected and serve as an executive committee for conduct of the business of the Representative Assembly.

The purpose of the association is to channel the interests and concerns of Divinity School students to the following ends:

1. to provide student programs and activities;
2. to represent students to the faculty and administration;
3. to represent students with other Duke University organizations; and
4. to represent students in extra-University affairs.

**Divinity School Choir.** A student organization of long standing is the Divinity School Choir. Membership is open to all qualified students. The choir sings regularly for chapel and at special seasonal programs and services. New members are chosen by informal auditions which are arranged for all who are interested.

**Divinity Wives.** Divinity Wives is an organization of wives in the Divinity School which offers opportunities for sharing interests and concerns. The wives' program, which includes a variety of speakers, small interest groups, and special projects, seeks to encourage and provide ways for wives to become a more integral part of the Divinity School community. Some activities are planned annually to include husbands and families. Faculty wives are also invited to attend the meetings.

**The Black Seminarians' Union.** This is an organization of black students whose major purpose is to insure the development of a theological perspective commensurate with the Gospel of Jesus Christ and relevant to the needs of black seminarians and the black church, to improve the quality of life academically, spiritually, politically, and socially in the Divinity School.

**The Student Pastors' Association.** This association provides students actively serving their denominations in an ordained or lay capacity opportunity to meet, to share, to plan, and to act on their common needs and concerns as those serving the church as senior and associate pastors while in school.

**Women's Office.** The Women's Office seeks to serve the entire Divinity School community through a focus on the special needs and contributions of women in ministry in and to the church and society today. The office, coordinated by a divinity woman student, is a resource center for the whole community in addition to a support and action center for women in particular.



# Financial Information



# Fees and Expenses

**Estimated Living Expenses.** The total cost for a student to attend the Duke Divinity School varies according to individual tastes and requirements; however, experience indicates that a single student may expect to spend a minimum of \$6,000 per year with an average of \$6,500 and a married couple may expect to spend a minimum of \$8,500.

**Housing Fees.** The charge for each person in a double room for the academic year is \$622 in the Trent Drive Hall. Single rooms are reserved for returning students.

The residential fee for Town House Apartments is \$764 and the fee for Duke Modular Homes is \$951. These rates are per person per academic year on the basis of three students to an apartment. Utility charges are not included in these fees. Cost of utilities, except water, will be shared by occupants in these apartments. Deposits are required by the telephone company.

Housing fees are subject to change prior to the 1979–80 academic year. A \$50 deposit is required on all reservations.

Rates for Central Campus Apartments will be quoted to applying students upon request to the manager of apartments and property. Refunds on housing fees will be made in accordance with the established schedules of the University.

**Master of Divinity and Master of Religious Education Candidates.** The table below lists basic minimum expenditures. In addition to the fees cited here, there is an admission fee of \$30 which is applied to the first term bill and a room deposit of \$50. See relevant sections on Admissions and Housing for full details.

	<i>Per Semester</i>	<i>Per Year</i>
Tuition—M.Div. and M.R.E.	\$1,187.50	\$2,375
Student Health Fee	53.50	107
Approximate Cost of Meals	565.00	1,130
Room (double) Trent Drive Hall	311.00	622

Tuition will be charged at the rate of \$297 per course. The figures shown are for a program carrying eight courses per year. Students will be charged for additional course enrollments.

**Master of Theology Candidates.** A student who is a candidate for the Th.M. degree will be liable for tuition on the basis of eight courses at the rate of \$297 per course. All other costs and regulations for the Th.M. degree are the same as those for the M.Div. and M.R.E. degrees.

**Special Student.** A special student is one who is enrolled for academic credit, but who is not a candidate for a degree at that time. The tuition will be charged on

a course basis. Other costs and regulations are the same as those for the M.Div. and M.R.E. candidates. No financial aid is available.

**Audit Fee.** Anyone seeking to audit a course in the Divinity School must, with the consent of the instructor concerned, secure permission from the associate dean's office. In accordance with the general University practice, a fee of \$40 per course will be charged all auditors who are not enrolled students or University employees.

**Athletic Fee.** Divinity School students may secure admission to all regularly scheduled University athletic contests held on the University grounds during the entire academic year by payment of the athletic fee of \$25 per year, plus any federal tax that may be imposed. The fee is payable in the fall semester.

**Payment and Penalty.** The tuition is due and payable not later than the day of registration for that semester. In unusual circumstances, a student may secure permission of the dean to delay registration, provided it is not beyond the first week of classes and the student pays the \$25 late registration fee.

Tuition refund will be made according to the following schedule: withdrawal from school before the beginning of classes—full refund; during the first or second week of classes—80 percent; during the third to fifth weeks—60 percent; during the sixth week—20 percent; no refunds after the sixth week. Tuition or other charges paid from grants or loans will be restored to those funds, not refunded or carried forward. No refunds will be made for withdrawal from individual courses.

**Debts.** No records are released, and no students are considered by the faculty as candidates for graduation, until they have settled with the bursar for all indebtedness. Bills may be sent to parents or guardians provided the bursar has been requested in writing to do so. Failure to pay all University charges on or before the times specified by the University for the semester will bar the student from class attendance until the account is settled in full.

**Motor Vehicle Registration Fee.** There is a \$20 registration fee for all automobiles (\$10 for two-wheeled motor vehicles) used on campus. For specifics see the chapter on Community Life.

## Student Financial Aid

A student should select a school on the basis of educational opportunity. At the same time financial consideration will be a legitimate and often pressing concern. Each student should formulate at least a tentative plan for financing the entire seminary education. Although the exact method of financing the full theological degree may not be assured at the beginning, a student should have a clear understanding of the expenses and available sources of income for the first year and the assurance that there exist ways of financing subsequent years.

The Committee on Financial Aid will counsel the student concerning financial needs and possible resources. There is constant review of available resources in order to assist the greatest number of students. However, the basic financial responsibility belongs to the student who is expected to rely upon personal and family resources and earning and borrowing power. Other resources may include the student's church, civic groups, foundations, and resources of the school which may include grants, loans, field work grants, and employment. It is the goal of the financial aid office to assist each student in planning a financial program so that as little indebtedness as possible will be incurred.

The total amount available through the Divinity School is limited. Further, the conditions set forth by the individual or institutional donors determine the circumstances under which the grants can be made. Almost without exception the donors require ecclesiastical endorsement and/or declaration of ministerial vocational aim.





The principles regarding the disbursement of financial aid are as follows:

1. Financial aid is recommended on the basis of demonstrated need. All students must file an application which substantiates needs and provides full information on potential resources. This is essential in order to make Divinity School funds available to the greatest number of students.
2. The total amount of financial aid available to any one student cannot exceed the average demonstrated need.
3. Grants will be made within the limits of the conditions set forth governing each source.
4. The conditions at the beginning of the academic year determining financial needs shall be the governing criteria for the year. Financial aid programs are set up on a yearly basis, except for those students who may enter the second semester and/or those few whose status may change.
5. Financial aid grants are made on a one-year basis. The assistance may consist of scholarships, loans, tuition grants, grants-in-aid, field education grants, and employment, which may be worked out in various combinations on a yearly basis. A new application must be filed each year.
6. Application for financial aid may be made by entering students at time of admission or currently enrolled students in the spring. Notification will be given after committee approval. Student pastors serving United Methodist churches can be notified after the pastoral charge and Annual Conference determine salary schedules.
7. Ordinarily financial aid is not available beyond six semesters (eight for pastors on reduced load).

## Financial Resources

**Personal.** In order that both the church and the Divinity School may be able to extend the use of their limited funds to as many students as possible, a student who desires a theological education should be willing to defray as far as possible



the cost of such an education. Resources may include savings, earnings, and gifts, support or loans, and if married, earnings of a spouse. In calculating anticipated income, the student first considers personal resources.

**Church.** Many local churches and conferences or other governing bodies provide gifts and grants for theological education, such as ministerial education funds which provide grants and/or service loans to theological students. The student makes application to the home church, Annual Conference, Presbytery, or other governing body. The financial aid office cooperates with these church agencies in making recommendations and in handling the funds. *United Methodist students and others must be under the care of the appropriate church body to be eligible for church support.* The school cannot compensate for a student's indisposition to receive church funds when such are available on application through the Annual Conference Ministerial Education Fund or other agencies.

The Divinity School, as a member school of the Association of United Methodist Theological Schools, takes cognizance of and subscribes to recommended policy and practice regarding the administration of United Methodist Church funds for student financial aid as adopted by the association, 15 June 1970, and as bearing upon tuition grants, as follows:

Resources for tuition grants, scholarships or the like are primarily available to students with declared vocational aims leading to ordination or recognized lay ministries and supported by commendation or endorsement of appropriate church representatives. At the same time, we believe that consideration for a tuition grant may be accorded to students who adequately indicate conscientious concern to explore, through seminary studies, a recognized church-related vocation. Finally, it is our judgment that, where the above mentioned conditions are deemed to be absent respecting a candidate for admission, the decision to admit such a candidate should be without the assurance of any tuition subsidy deriving from church funds. (AUMTS Minutes, 15 June 1970.)

**Divinity School Scholarships.** A limited number of scholarships are available to encourage qualified students to pursue their preparation for the Christian ministry. Such students ordinarily will not be eligible for remunerative employment during the academic year. When a student holding a scholarship is permitted to engage in remunerative employment, it is understood that adjustments may be made in the total scholarship and financial aid program for that student.

**Junior Scholarships.** Junior scholarships are available to a limited number of entering students of the junior year who are candidates for the Master of Divinity degree, and are awarded on the basis of academic record and promise of usefulness in Christian ministry. These scholarships are for the amount of up to \$1,500 depending upon demonstrated need. Tuition grants in varying amounts are also available up to full tuition if demonstrated need warrants. Further, if the student applies for the Summer Endowment and Field Education Program, placement may be anticipated. Junior Scholarships are not renewable.

**National United Methodist Scholarships.** The General Board of Education of the United Methodist Church makes available two \$750 scholarships to rising middle-classes who have made outstanding records in the first year class. The Department of the Ministry offers these scholarships to students preparing for the parish ministry.

**Middler Scholarships.** Middler Scholarships of up to \$1,000 are made available to rising middle-classes on the basis of academic attainment, character, and promise for the Christian ministry. The exact amount of the scholarship is dependent upon demonstrated need of the student.

**Senior Scholarships.** Two Rowe Scholarships for seniors and a limited number of additional senior scholarships in amounts of up to \$1,000, depending on demonstrated need, are awarded to rising seniors who have achieved academic excellence and who give unusual promise of service in the Christian ministry.

*Foreign Student Scholarships.* In cooperation with the Crusade Scholarship Committee of the United Methodist Church and other authorized church agencies, students are selected and admitted to courses of study. Scholarships for such students are provided from the Lewis Clarence Kerner Scholarship Fund and from individual churches and private philanthropy.

**Tuition Grants.** These are available in amounts commensurate with demonstrated need as adjudged by the Committee on Scholarships and Financial Aid. Entering students may apply, on notice of admission, by submitting the financial aid inventory to the Office of Financial Aid. Enrolled students may apply by annual renewal of their financial aid inventory. Because of the purpose and attendant educational objectives of the school, resources for tuition grants are primarily available to students with declared ministerial aims or those wishing to explore a ministerial vocation leading to ordination or recognized lay ministries.

**Field Education Grants.** Varying amounts are made available through the Divinity School to students who choose to participate in the field education program. The Offices of Field Education and Financial Aid work together in determining placement and grant amount. This program includes the summer assistants, winter assistants, and student pastors. See full description under the section on Field Education.

**Loans.** Loan funds held in trust by the University, as well as United Methodist student loans and funds supplied by the federal government through the National Defense Education Act of 1958 are available to qualified students. The application must be submitted by 1 July.

Unless otherwise indicated, all correspondence concerning financial aid should be directed to: Financial Aid Office, The Divinity School, Duke University, Durham, North Carolina 27706.

**Employment.** Students or spouses desiring employment with the University should apply to the director of personnel, Duke University. Students or spouses make their own arrangements for employment either in the city of Durham or on campus.

## Financial Aid Resources

Certain special funds have been established, the income from which is used to provide financial aid through scholarships and field education grants for students wishing to secure training in preparation for Christian ministry. The resources listed below include endowed funds and sources of annual contributions.

**Alumni Scholarship Fund.** This fund was established in 1976 by the alumni of the Divinity School to provide financial support for ministerial candidates.

**R. Ernest Atkinson Legacy.** This legacy was established in 1952 under the will of the Reverend R. Ernest Atkinson, Trinity College Class of 1917, Richmond, Virginia.

**Fred W. Bradshaw Fund.** This fund was established by Fred W. Bradshaw of Charlotte, North Carolina, to be utilized for the enrichment of the educational program of the Divinity School, especially to support distinguished visiting scholars and outstanding students.

**Emma McAfee Cannon Scholarship.** This scholarship was established in 1969 by Bishop William R. Cannon in memory of his mother, Emma McAfee Cannon, and is designated to assist students from the North Carolina Annual Conference of the United Methodist Church who are studying for the pastoral ministry and planning to spend that ministry in the North Carolina Conference.

**E. M. Cole Fund.** This fund was established in 1920 by Eugene M. Cole, a United Methodist layman of Charlotte, North Carolina.

**Dickson Foundation Awards.** These awards were established by the Dickson Foundation of Mount Holly, North Carolina, to provide assistance to students who demonstrate financial need and superior ability. Preference is given to children of employees of American and Efirid Mills and its subsidiaries, to residents of Gaston, Caldwell, and Catawba Counties, and to North Carolinians.

**The Duke Endowment.** Among the beneficiaries of the Duke Endowment, established in 1924, are the rural United Methodist churches of the two North Carolina Conferences. Under the Maintenance and Operation Program, Field Education Grants are available for Duke Divinity School students to serve in rural United Methodist churches under the Endowment and Field Education Program.

**N. Edward Edgerton Fund.** This fund was established in 1939 by N. Edward Edgerton, Trinity College Class of 1921, of Raleigh, North Carolina.

**George D. Finch Scholarship Fund.** This fund was established in 1972 by George David Finch, Trinity College Class of 1924, of Thomasville, North Carolina.

**James A. Gray Fund.** In 1947 James A. Gray of Winston-Salem, North Carolina, presented this fund to the Divinity School for use in expanding and maintaining its educational services.

**P. Huber Hanes Scholarship.** This scholarship was established by the late P. Huber Hanes of Winston-Salem, North Carolina, Trinity College Class of 1900, as a scholarship fund for Duke University, a portion of which is used to provide financial assistance for Divinity School students.

**Richard R. Hanner, Jr. Scholarship.** This scholarship was established in 1973 by friends of the late Richard R. Hanner, Jr., Trinity College Class of 1953, to support advanced work in Christian education.

**Franklin Simpson Hickman Memorial Fund.** This fund was established in 1966 by Mrs. Veva Castell Hickman as a memorial fund in memory of her husband, who served as professor of the psychology of religion, the dean of the chapel of Duke University, and the first preacher to the University. The income of the fund will support a regular visiting lecturer in preaching and financial aid to students who wish to specialize in the psychology of religion.

**George M. Ivey Scholarship Fund.** This fund was established in 1948 by a gift of George M. Ivey, Trinity College Class of 1920, of Charlotte, North Carolina.

**Charles E. Jordan Scholarship Fund.** This fund was established in 1969 by the family of Charles E. Jordan, former vice-president of Duke University.

**Lewis Clarence Kerner Scholarship.** This fund was established in 1959 by Beatrice Kerner Reavis of Henderson, North Carolina, in memory of her brother and designated for the assistance of native or foreign-born students preparing for service in world Christian mission.

**Carl H. and Mary E. King Memorial Fund.** This fund was established in 1976 by friends and family and is to be used for students preparing for the parish educational ministry.

**Laurinburg Christian Education Fund.** This fund was established in 1948 by members of the First United Methodist Church, Laurinburg, North Carolina.

**Dr. D. M. Litaker Scholarship.** This scholarship was originally established by Charles H. Litaker in 1946 in honor of his father, Dr. D. M. Litaker, Trinity College Class of 1890, and was specified for the Divinity School in 1977 by the

Litaker family. The income is for support of persons preparing for ministry in the Western North Carolina Annual Conference of the United Methodist Church.

**Myers Park Scholarship Fund.** This fund was established in 1948 by members of the Myers Park United Methodist Church, Charlotte, North Carolina.

**W. R. Odell Scholarship.** This scholarship was established in 1946 by the Forest Hills United Methodist Church, Concord, North Carolina.

**Gilbert T. Rowe Memorial Scholarship Fund.** This fund was established in 1960 through the generosity of Divinity School alumni and friends of the late professor of systematic theology.

**Elbert Russell Scholarship.** This scholarship was established in 1942 by the Alumni Association of the Divinity School in honor of the late dean of the Divinity School and professor of biblical theology.

**Earl McCrary Thompson Scholarship.** This scholarship was established in 1974 in honor of the late Earl McCrary Thompson, Trinity College Class of 1919.

**Hersey E. Spence Scholarship.** This scholarship was established in 1947 by the Steele Street United Methodist Church of Sanford, North Carolina, in honor of their former pastor and late professor in the Divinity School.

**The United Methodist Church.** The United Methodist Church makes a substantial contribution to the Divinity School by designating a percentage of its ministerial education fund and world service offerings for theological education. The general Board of Education makes available annual two National United Methodist Scholarships having a cash value of \$750 each.

**The Divinity School Fellowship.** This fellowship was established by a group of interested laypersons who provide support for students with demonstrated need.

**Dempster Graduate Fellowships.** The United Methodist Board of Education offers two fellowships each year for graduates of United Methodist theological schools who are engaged in programs of study leading to the Ph.D. degree in religion. A number of Divinity School graduates have held these fellowships.



# Field Education



## A Ministerial Development Program

Field education is designed to develop ministerial competency in divinity students by placing them in situations where they can bring their theological concepts to bear upon the problems and dilemmas of real life; where they can develop skill in ministerial tasks; where they can bring the perceptions derived from personal experience to bear on their reflective studies; and where these perceptions may be integrated into the students' life and expressed in effective ministry behavior.

As the clinical dimension of theological education, field learning is designed to: (1) help students develop vocational identity as ministers by providing experience with a variety of ministry tasks; (2) provide a ground for the testing and reconstruction of theological concepts; (3) develop the ability to do critical and reflective thinking by relating theory and experience; (4) help students develop ministry skills to achieve an acceptable level of professional competence; (5) integrate academic studies, personal experiences, and critical reflection into a personal spiritual foundation that produces a confident and effective ministry.

## Field Education Credit Requirements

In an effort to sustain the learning focus of field education, the faculty has approved the following credit requirement plan. Two units of approved field education placement are required for graduation in the Master of Divinity degree program. A unit is defined by one term placement, either a summer term of ten weeks or a winter term of thirty weeks at fifteen hours per week. To be approved, the field setting must provide ministerial identity and role, distinct ministerial tasks, qualified supervision, a service-learning contract, regular supervision conferences, and effective evaluation. Each unit also requires completion of the appropriate field education seminar.

The seminar required for each unit of credit will include the use of case material prepared by the student and critical reflection upon the nature and task of ministry as it is experienced in an approved field setting. Seminars will be led by faculty and practicing ministers. The field seminars must be taken in sequential pattern: FE I, Ministerial Development Seminar, must be *completed* by the end of the third semester of study and is prerequisite to FE II, Ministerial Practice Seminar, taken during one of the last two semesters of study. One unit of clinical pastoral education may be substituted for FE I. Students must be enrolled in the school and have full-time status to be eligible for credited field seminars.

To qualify for credit the student must preregister for the approved placement, develop and complete a learning contract with acceptable quality of work,

cooperate with the supervisor, participate in the assigned seminar, and prepare an evaluation of the experience. Evaluation and grading will be done by the field supervisor, student, and seminar leader.

## Field Settings for Ministry Development

Field placements are usually made in settings that have been developed and approved by the Divinity School. They contain opportunities for ministerial service under supervision, pastoral identity, and evaluation.

A wide variety of ministry settings is available for varying student interests: parish settings include rural, suburban, central urban, cluster groups, larger parish patterns, staff team ministries; social agency settings include a settlement house, and a social service referral program; institutional settings include mental health institutions, prisons, youth rehabilitation centers, mental retardation centers, and retirement homes; campus ministry settings include positions on the campus of a variety of schools as well as internships in college teaching; resort ministries in the summer term, and youth camps.

While the Divinity School offers this rich diversity of settings for personal and professional development, the backbone of the field program is the church in the small community.

## Internship Program

An internship assignment embraces both a full-time salaried position and a learning commitment in a single context over a period of time ranging from four to twelve months. These assignments are designed to engage the student in considerable depth in particular ministry skills in a setting relevant to the vocational area of interest. They must encompass an advanced level of specialized field experience which is more complex and extensive in its serving and learning potential than the basic field education program short-term placement. The internship may be individually designed to meet the needs and interests of the student, provided that the plan includes a student learning contract, an agency service contract, approved supervisory standards, an investigation-research project acceptable to the assigned faculty adviser, and participation in either a colleague group or seminar. When these components are satisfactorily met and the evaluation reports are filed, credit for up to two courses (six semester hours) may be assigned for the internship. No additional academic credit may be accumulated during the internship year. Grading for the two course credits will be on a pass/fail basis.

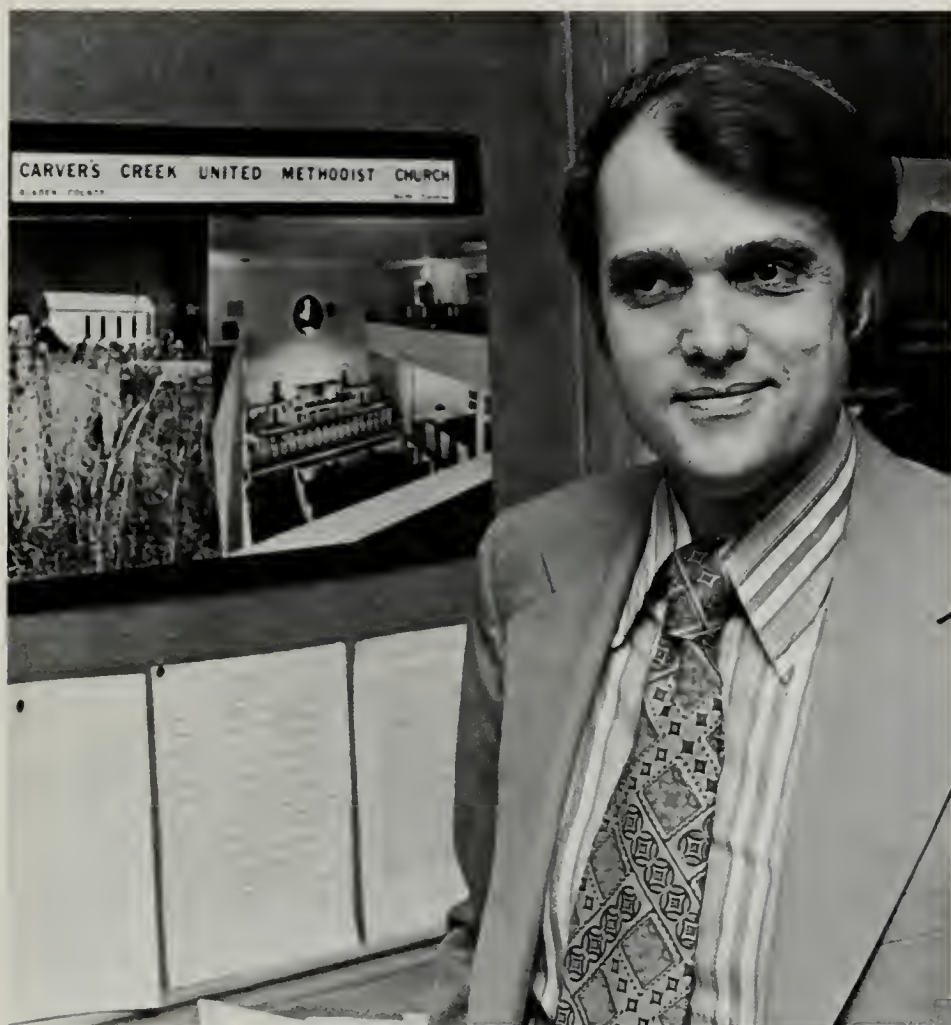
Internship settings may be student initiated or negotiated by the School. In either case an agency contract covering all agreements must be made and filed with the director of field education. Types of settings occasionally available for internship placement include: campus ministry and college chaplaincy positions; parish ministry positions—such as associate pastor, parish director of education; social agency and institutional positions; a world mission internship of one to three years of national or overseas service; and occasional governmental positions. Other internships in the church or in specialized ministries in the secular world may be planned in consultation with the director of field education.

To be eligible to register for an internship, the students must have completed at least three semesters of their seminary curriculum and be registered as students in good standing in the Divinity School. Application forms and processing for internships will be done through the Office of Field Education.

## Students Serving As Pastors

Students frequently serve as pastors of churches, or part-time associates, during the period of their study in the Divinity School. These appointments are



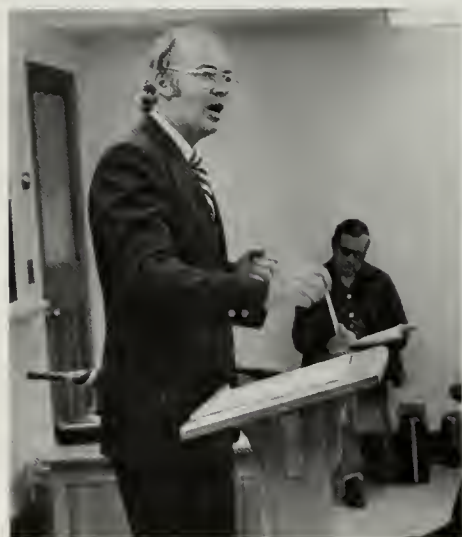


made by the appropriate denominational official or body. The Divinity School recognizes this arrangement and recommends that the student should consult with the Assistant Dean for Field Education, as agent of the Dean, before accepting an appointment as pastor or associate pastor. In some cases this is required before grants can be approved.

The Field Education Office cannot make these appointments. This is within the jurisdiction of denominational authorities, and students should initiate their own arrangements. The Field Education Office, however, will provide current information concerning pastoral appointments open to students and will send references upon request to ecclesiastical officials. Salaries and other forms of remuneration for this pastoral service must be reported to the financial aid secretary of the Divinity School when application is made for financial aid from the school.

Students who serve in these capacities ordinarily may enroll in not less than three courses per semester, thus requiring, in most cases, four academic years to complete the Master of Divinity degree. Relaxation of this regulation requires the permission (on the appropriate form) of the supervising church official, the Assistant Dean for Field Education, and the Associate Dean for Curricular Affairs.





Further, students whose residence is located more than fifty miles from the campus will be required to live on campus during the academic week. Any departure from this requirement must be negotiated with the Assistant Dean for Field Education.

In keeping with the goal of the school to develop professional competence in ministry, students should use their pastoral appointments as learning contexts for field education programs initiated by the school. Special seminars and reflection groups are arranged in consultation with students to advance their professional growth and performance. For particular field learning projects, a supervisor may be assigned to guide the pastor's learning activity in the parish. Periodic evaluation will be expected from both supervisors and pastors. The required field education units may be done in the pastor's parish, if all the conditions outlined for credit are met, and all reports are completed and filed at the appropriate time.

## Field Education Seminars

The two professional ministry units of credit required for the Master of Divinity degree may be earned by approved field placement and participation in the seminars listed below. FE I is prerequisite to FE II.

**FE I. Ministerial Development Seminar.** Through the use of case material, critical reflection upon the nature and task of ministry as experienced in a field context with special emphasis upon vocational development and ministerial role. Two hours a week. *Faculty or Staff Leadership*

**FE II. Ministerial Practice Seminar.** Case studies to develop competence in church administration, preaching and worship, pastoral care and counseling, and religious nurture and teaching. Two hours a week. *Faculty, Staff, and Professional Ministerial Leadership*

Registration for these seminars should be done through the registrar's office at the normal registration time. Credit forms should be secured from the field education office. Since no semester hour credit values are assigned to these seminars, there will be no tuition charge for them. A quarter of clinical pastoral education completed in an approved setting may be substituted for both approved field placement and field seminar.

# Black Church Studies



## The Black Church Studies Program

Black Church Studies at Duke Divinity School is an engagement of the Divinity School with the black church, black theology, and the black community, and represents an appreciation for study of and involvement in black religious experiences. The Black Church Studies Program exists to illuminate the several dimensions of these experiences, to investigate and expose the contributions which the black church has made and can make to both the black community and American culture, and to actualize the potential for service to the church through its special concerns for ministry and mission to black people in both church and community. The program is a concrete expression of the role of Black Church Studies in theological education which undertakes faithfully to serve Christ and his church.

The Black Church Studies Program is the visible evidence of a quest for ministry, justice, and community among Divinity School faculty and students. It is a quest of teachers and seminarians, clergy and laity from both races for clearly developed curricular programs, research projects, and continuing education. It is recruitment, counseling, supervision, curriculum development, research, teaching, academic advising, continuing education, and service to black churches and congregations. It is, in conception and nature, an instrument which serves both internal and external interests of the Divinity School; and its immediate clientele is simultaneously the academic and religious communities.

The curriculum in Black Church Studies is already being developed and staffed, and the list of current offerings may be found in this catalogue in the section on Courses of Instruction. Dr. Joseph B. Bethea served on the staff from 1972 to 1977 as Director of Black Church Studies; The Reverend Karen Y. Collier served as Acting Director of the Black Church Studies Program from August 1977 to May 1978. On 1 January 1979, Dr. Lawrence E. Johnson was appointed Director of Black Church Affairs. Dr. Herbert O. Edwards and Mr. C. G. Newsome joined the faculty in 1974 and 1978 respectively. In addition, black faculty from the religion department and from other departments of the University complement our offerings, and associates in instruction are secured as need arises.

In the 1979-80 academic year, thirty-nine black seminarians were enrolled at Duke. This constitutes between 10 and 11 percent of the total enrollment. Seven of these were graduated in May 1979, with the master of Divinity degree and Master of Religious Education degree.

The Black Church Studies Program and the Black Church Affairs Office works cooperatively. The Black Church Studies Program functions in the areas of academic studies, curriculum development and teaching, and research. The Black Church Affairs Office provides counsel and advice to prospective black seminarians in undergraduate schools, and has responsibility for continuing education for black pastors, recruiting, advising students about field education, placement, financial aid, adjustment needs, and a broad range of other student requirements. We encourage and welcome inquiries concerning a program of studies for Duke Divinity School. Further information about the Black Church Studies Program or the Black Church Affairs Office is available from the Director, Duke Divinity School, Durham, North Carolina 27706.



# Continuing Education



## The Continuing Education Center

Through the Continuing Education Center and the new full-time Director of Continuing Education, the Divinity School offers expanded services of its faculty and facilities in continuing education for ministry. The Charles P. Bowles Continuing Education Center in the new wing of the Divinity School includes a seminar room and spacious study carrels for ministers involved in individual study or in-residence seminars. The Divinity School Library; the Henry Harrison Jordan Loan Library; the growing collection of tape recordings of sermons, lectures, and interviews; the Pickens Communications Center; and *The Duke Divinity School Review* are also available for continuing education for ministry. The Director and the Divinity School Committee on Continuing Education, in cooperation with church leaders throughout the region, provide a year-round program of in-residence seminars and conferences, extension seminars and consultations, and special services to ministers and churches in the vicinity.

## Admission and Scholarships

Conferences, churches, and other supporting groups and institutions have made available through the Divinity School certain designated funds to assist in continuing education for ministry. Inquiries, applications for admission, and requests for continuing education scholarships for in-residence seminars should be directed to: Director of Continuing Education, Duke Divinity School, Duke Station, Durham, North Carolina 27706.

## In-Residence Seminars and Conferences

During the academic year 1978-1979 the Divinity School conducted or co-sponsored a series of in-residence continuing education seminars, workshops, and conferences, with faculty and guest leaders. These included the "Pre-Retirement Planning Seminar," "Preaching and Worship in the Congregation of Small Membership," and special seminars for ministers and district superintendents of the Salisbury, Fayetteville, Asheville, Marion, and Albemarle Districts. In addition, individual ministers have been guided in special semester-long continuing education studies in the Divinity School.

The Spring Institute for Ministry was the major continuing education program of 1978-79. First week seminars included "Discovering and Enabling Meaningful Membership and Worship," "Preachers without Pulpits: Theological Problems in Contemporary Writing," "Rituals for Living and Dying," "Biblical

Perspectives on Death and Dying," "Equipping the Saints: Vital Adult Education in the Local Church," and "Worship as a Pastoral Concern."

Second week seminars and supervisory training for ministers preparing to supervise divinity students in summer ministries dealt with "From Text to Sermon," "Preaching from the Gospels," "Cults and Sects Around Us," "Church Administration and Pastoral Supervision in Churches with Limited Resources," "Conflict and Resolution in the Parish," and "Introduction to Supervision."

## **Extension Seminars, Workshops, and Lectureships**

Extension services in continuing education for ministry during 1978-79 included a varied series of seminars, workshops, lectureships, and conferences held in cooperation with district and conference continuing education committees, church agencies, and institutions of higher education and professional training for ministry. Divinity School faculty and associated resource leaders provided such services as lectureships and preaching in pastors' schools and conferences, theological schools, and Christian educators' conferences in many states. Other services included faculty leadership in district colleague group studies and in Institute for Homiletical Studies groups, and co-sponsorship of seminars at the Intentional Growth Center, Lake Junaluska, on "Stress in the Parsonage" and "Management for Ministry."

Two faculty-led "Introduction to Mexico" travel-study seminars included ministers, laity, and divinity students.

## **The Convocation and Pastors' School**

The annual Divinity School Convocation and North Carolina Pastors' School, a cooperative endeavor with the North Carolina and Western North Carolina Conferences of the United Methodist Church through the board of managers of the Pastors' School, brings ministers, lay persons, students, and faculty together for a series of lectures, sermons, and courses, along with alumni reunions and social occasions.

The Gray Lecturer in the 23-25 October 1978 was the Reverend Dr. Schubert M. Ogden, Southern Methodist University. The Reverend Dr. Thomas C. Oden, Drew University, was the Hickman Lecturer. The Convocation Preacher was the Reverend Dr. James A. Forbes, Jr., Union Theological Seminary. Other lectures, services of worship, and workshops on "Pastoral Care and Counseling" were led by the Reverend Dr. Richard A. Goodling, Duke University Divinity School; Dr. and Mrs. David R. Mace, Presidents of the Association of Couples for Marriage Enrichment (ACME), Winston-Salem; the Reverend Dr. and Mrs. David B. Maxwell, Personal and Family Counseling Center, Asheville; and Bishop James S. Thomas, Resident Bishop of the Ohio East Annual Conference, The United Methodist Church. The Divinity School Choir led worship through music. Alumni gathered for class reunions and the general Alumni Association Luncheon, at which Bishop W. Kenneth Goodson, Class of 1937, received the Distinguished Alumnus Award.

## **Lectures and Symposia**

**The James A. Gray Lectures.** These annual lectures, established in 1950 as part of a bequest made in 1947 by James A. Gray of Winston-Salem, North Carolina, are delivered in the context of the Divinity School Convocation and North Carolina Pastors' School. The Reverend Dr. Schubert M. Ogden, Professor of Theology, Perkins School of Theology, and Director of Graduate Programs in Religion, Southern Methodist University gave the 1978 Gray Lectures on the

general theme, "Faith and Freedom: Toward a Theology of Liberation." The 1979 Gray Lecturer, 22-24 October, will be the Reverend Dr. Leander E. Keck, Professor of New Testament, Candler School of Theology, Dean-elect of Yale Divinity School.

**The Franklin S. Hickman Lectureship.** This lectureship was established in 1966 as part of a bequest by Mrs. Franklin S. Hickman in memory of her late husband, Dr. Franklin Simpson Hickman, Professor of Psychology of Religion, Duke Divinity School, and Dean of the Chapel, Duke University. This lectureship enables the Divinity School to bring practicing ministers of extraordinary qualities to lecture and preach in the Convocation and Pastors' School and to participate in Divinity School classes, worship, and informal sessions with students and faculty. The Reverend Dr. Thomas C. Oden, Professor of Theology, the Theological School, Drew University, was the 1978 Hickman Lecturer, on "Agenda for Pastoral Theology." Hickman Lectureship funds also contributed to support of the leaders of pastoral care and counseling workshops listed above. The 1979 Hickman Lecturer-Precator will be the Reverend Dr. David G. Buttrick, Professor of Homiletics, Saint Meinrad School of Theology.

**Symposium on Christian Missions.** Each year the Divinity School presents a symposium on the world mission of the church, usually including a visit by a secretary or missionary personnel. The general aims are "to inform students and faculty of the philosophy and work of missions as seen through the personal experience of speakers; to educate present and future ministers so that they will have a vital concern for the promotion of missionary education in the local church; and to evaluate the missionary enterprise as a significant force in the revolutionary world."

## Ministry in the Vicinity

Ministers and churches in the vicinity of Duke University are especially welcome to avail themselves of continuing education programs, facilities, and other services of the Divinity School and its faculty and students. They are invited to attend public lectures, visit with distinguished lecturers, participate in in-residence seminars and conferences, audit selected courses, study in the continuing education carrels, and use the resources of the Divinity School Library, the Henry Harrison Jordan Loan Library, and the tape recordings collection. Divinity School faculty, staff, and students are generally available for preaching, teaching, and other services in churches of the community and region.

## The Course of Study School

In cooperation with the Department of Ministry of the Board of Education and the Southeastern Jurisdictional Conference of the United Methodist Church, Dr. William H. Willimon directs the Course of Study School for pastors of the United Methodist Church. This school is in session for approximately four weeks each summer and the required studies for one full year can be completed in this period. This is not a part of the regular work of the Divinity School degree program, and no credit toward a seminary degree can be earned. The faculty includes representatives from the Divinity School and other church-related institutions. The thirty-first session of the Course of Study School was held 25 June to 20 July 1979.

## The J. M. Ormond Center for Research, Planning, and Development

This center was established in memory of the late Dr. J. M. Ormond, professor of practical theology of the Duke Divinity School and director of the Rural Church



Program under the Duke Endowment 1923-48. The North Carolina Annual Conference established the J. M. Ormond Fund in 1951. This fund was a part of the special effort by the North Carolina and the Western North Carolina Conferences of the United Methodist Church to raise extra funds for the Divinity School. The center is under the director of research, Professor Robert L. Wilson, and is jointly supported by the Ormond Fund and the program of the rural church under the Duke Endowment. The purpose of the center, which is structured in cooperation with the two annual conferences, is to assist the church in performing its ministries. The center utilizes the methodologies of the social sciences to provide research and planning services for congregations and denominational organizations.

## **The Henry Harrison Jordan Loan Library**

Henry Harrison Jordan, (1862-1931), distinguished member of the Western North Carolina Conference, was memorialized by his children by the establishment of an endowment in 1947. The Divinity School librarian is the custodian of books purchased under this fund for loan, through postal services, to qualified ministers of all denominations or localities. The Jordan Loan Library undertakes to maintain a catalogue of up-to-date publications representative of the several theological disciplines and areas of the minister's professional interest. Books may be borrowed by application to the librarian of the Divinity School.

## **The Duke Divinity School Review**

Three times each year (autumn, winter, and spring) the Divinity School publishes a magazine designed to acquaint its readers with current theological thinking through the inclusion of public addresses given at the school, articles by faculty members and others, and book reviews. The *Review* is circulated free of charge to a mailing list of some 2,600, including alumni of the School, interested friends, campus ministers, teachers, administrators, and librarians. It is also available to students upon request.

## **Other Programs**

**Facilities for Advanced Study through the American Schools of Oriental Research.** Duke University is one of the supporting members of the American Schools of Oriental Research. Accordingly, students in the Divinity School have the privilege of attending the Albright Institute of Oriental Research in Jerusalem, the American Center of Oriental Research in Amman, and similar institutions without charge for tuition. They may also compete for the four fellowships offered annually by the Schools, the stipends depending upon available funds.

**Programs in Pastoral Psychology.** Programs in pastoral psychology beyond the studies incorporated in the M.Div. curriculum are provided in cooperation with the Duke University Medical Center. Three such special programs are available.

1. The Master of Theology degree with a major in pastoral psychology is ordinarily a calendar year program beginning the first full week in June. However, upon the recommendation of the staff, candidates with a quarter or more of clinical pastoral education may begin their program in September. The candidate may plan one of three programs or concentrations: a concentration in pastoral theology relating psychology and theological understanding to professional ministry, especially the parish, through course work and supervised field or clinical experience; a concen-

tration in pastoral care through course work and an intern year in basic clinical pastoral education; and a concentration in pastoral counseling through course work and a year of advanced clinical pastoral education. In the context of clinical pastoral education various professional goals may be sought including general understanding and skills in pastoral care and specialization in pastoral counseling and clinical supervision. The program in clinical pastoral education is certified by the Association for Clinical Pastoral Education. Persons specializing in pastoral counseling will advance toward certification with the American Association of Pastoral Counselors. A quarter of clinical pastoral education (PP 277A or its equivalent) is considered a prerequisite for all programs. Degree candidates who extend their program over the calendar year receive three certified units of clinical pastoral education and nondegree candidates receive four certified units.

2. Single quarters of Basic Clinical Pastoral Education are offered each summer (beginning the first Monday in June and running for eleven weeks) and during the academic year either concentrated in one semester or extended over two semesters. When the quarter is completed within one semester, the student may take two other courses in the regular M.Div. program; when it is extended over two semesters, the student may take three other courses. Two transfer course credits will be granted for a summer CPE quarter or two course credits will be granted for the quarter taken during the academic year (unless a course credit has already been granted for PP 177, in which case only one additional credit will be given for the CPE quarter).

Students in CPE may not have other field education appointment or employment. However a CPE quarter will, when satisfactorily completed, count as one field education unit if taken in relation to either Field Education Seminar I or II. Only one field education requirement may be fulfilled by CPE.

Students are reminded that ordinarily no more than five courses out of twenty-four for the M.Div. degree should be taken in any one subdivision.

3. A one-year certificate or nondegree internship program in clinical pastoral education is available through the Duke Medical Center for persons who hold the Master of Divinity degree or its equivalent. Also, students who wish to pursue a pregraduation intern year are invited to apply, provided they have completed at least one year of theological education. The certificate, nondegree intern year can be done at any level of clinical pastoral education (basic, advanced, supervisory) at which the candidate and the supervisory staff judge appropriate. These persons may enroll in the Divinity School as special students for a course or two each semester. Such training usually provides four quarters of certified clinical pastoral education credit.

For further information concerning any of these programs, write to Dr. Richard A. Goodling, Director, Programs in Pastoral Psychology, Duke Divinity School. See the section on the Master of Theology degree program.

## Library Funds

The following funds provide resources to enrich the collections of the Divinity School Library.

**Ormond Memorial Fund.** Established in 1924 by Dr. J. M. Ormond, '02, and Mrs. Ormond, in memory of his mother and father, Mr. and Mrs. J. J. Ormond, the

income from the Ormond Memorial Fund is to be used for the purpose of a collection of books on the rural church for the Divinity School Library at Duke University.

**Avera Bible Fund.** Established in 1895 by gift of Mrs. L. B. McCullers in memory of her husband, Willis H. Avera; the income to be used for the purchase of books for the Divinity School Library and for the support of the Avera Bible Lectures.

**Louis W. Bailey Memorial Fund.** This memorial fund was established in 1958 by the Reverend A. Purnell Bailey in memory of his father. The income is to be used for books for the Divinity School Library.

**Stuart C. Henry Collection Endowment Fund.** This fund was established by the Class of 1975 in honor of Professor Henry with income to be used to purchase books in the collection on American Christianity.

**The William Arthur Kale, Jr. Memorial Fund.** William Arthur Kale, Jr. was a member of the Duke University Class of 1958, a lover of sacred art and music, and a member of the University Chapel Choir. In 1964 his parents, Professor and Mrs. William Arthur Kale, Sr., established a fund in his memory for the purchase of books and other materials in the area of fine arts and religious musicology for the perpetual enrichment of the holdings of the Divinity School Library.

**The Walter McGowan and Minnie Daniel Upchurch Fund.** Established in 1971 by W. M. Upchurch, Jr., an alumnus of Duke University and a member of its Board of Trustees, the fund, honoring Mr. Upchurch's mother and father, is used for the purchase of materials in the area of sacred music and is supplementary to a collection of materials given by Mr. Upchurch to the Divinity School Library. This collection includes 1,487 anthems and other compositions of sacred music, along with sixty-two disc recordings of the Duke University Summer Chapel Choir for the years 1937-41, at which time Mr. Upchurch was director of the choir.









# Curriculum



## **Degree Programs**

The academic work of the Divinity School embraces three degree programs: the Master of Divinity degree (M.Div.) ordinarily of three academic years; a one-year program beyond the basic degree, the Master of Theology (Th.M.); and a third program of two academic years leading to the degree of Master of Religious Education (M.R.E.). All are graduate-professional degrees. Admission to candidacy for any of these three degrees presupposes the completion of the A.B. or its equivalent.

Students preparing for ordination to the Christian ministry and requiring appropriate graduate-professional education will enroll for the Master of Divinity degree. Students whose acquired academic standing, under this basic degree program, entitles them to further specialized study may advance their command of selected theological disciplines by applying for an additional year of studies leading to the Master of Theology degree. Together, these two degree programs constitute a sequence. Although the Master of Divinity degree fulfills requirements for ordination by prevailing ecclesiastical standards, the Th.M. program may assist in assuring a larger measure of professional preparation. Application for admission to the Th.M. program is open to graduates of other schools who have completed the basic theological degree.

The Master of Religious Education degree program is designed to prepare qualified persons, ordinarily not seeking ordination, for a ministry of Christian education in local churches or other organizations. The course of study is arranged to provide grounding in Biblical, historical, and theological disciplines as essential background for instruction in and exercise of professional competence in curricular planning, teaching methods, and supervision of educational programs for various age groups.

The specific requirements for each of these degrees are found in the succeeding pages. It is evident that completed course work cannot be credited toward more than one degree. Reciprocal transfer of credit for course work taken under either the M.Div. or the M.R.E. program requires the permission of the associate dean for curricular affairs.

## **Doctoral Studies Accredited by the Graduate School**

The Divinity School provides a substantial body of course offerings at an advanced level in Biblical, historical, and systematic and contemporary theological disciplines that are accredited alike by the Graduate School and the faculty of the Divinity School, and lead to the Doctor of Philosophy degree. Sharing responsi-

bility with the University Department of Religion for staffing and curricular provision of this course of study, the Divinity School is the principal contributor to the program of graduate studies in religion. However, since the Ph.D. in religion is certified and awarded under the Graduate School, the doctoral student's admission and matriculation are administered under that division of Duke University.

With few exceptions, most courses in the *Bulletin of The Divinity School* carrying a 200 number or above and belonging to the fields noted above are applicable to doctoral programs of study. These courses are open to qualified M.Div., Th.M., or M.R.E. students by permission of the instructor.

Qualified persons who desire to pursue studies leading to the degrees of M.A. or Ph.D. in religion, under the administration of the Graduate School, are advised to apply to the dean of that School. Inquiries concerning fellowships or specific requirements of the Program of Graduate Studies in Religion may be addressed to Professor D. Moody Smith, Jr., Director, 209 Divinity School.

## The Basic Theological Degree—Master of Divinity

The faculty of the Divinity School constantly endeavors to review the curriculum as a whole and to tailor individual courses to meet the needs of a rapidly changing world. Major curricular revisions were instituted in 1948, 1959, and 1967. The curriculum is, therefore, not static but dynamic and is always subject to emendation by the faculty.

This degree program is structured to elicit a positive response to: (1) the challenge to provide an adequate professional education—education for ministry; (2) the needed variability of ministries in today's complex world; (3) the norms of university education; and (4) the Christian tradition.

**Aims of the Curriculum.** The aims of the basic degree program focus upon four goals, four areas of personal and curricular responsibility, four life-long tasks which should be strongly advanced during the seminary years.

1. *The Christian Tradition.* To acquire a basic understanding of the Biblical, historical, and theological heritage.
2. *Self-Understanding.* To progress in personal and professional maturity—personal identity, life style as an instrument of ministry, major drives, handling of conflict, resources, and professional competency and so forth. This is to be coupled with a sensitivity to the world in which we minister—its social forces, its power structures, its potential for humanization and dehumanization.
3. *Thinking Theologically.* To have the ability to reflect about major theological and social issues and to define current issues in theological terms and theological issues in contemporary secular terms.
4. *Ministering-in-Context.* To have the ability to conceptualize and participate effectively in some form of contemporary ministry.

Goals of such scope cannot be neatly programmed in any curriculum, and the degree of achievement (in seminary and beyond) will vary with individuals and their own motives and incentives.

**The Basic Curriculum—General Description.** Beginning with the 1976–77 academic year, graduation requirements for the Master of Divinity degree consist of satisfactory completion of twenty-four courses and two units of approved field education. Students who matriculated prior to 1 September 1976, are required to complete 75 semester hours of class credits and one unit of field education. The basic curriculum leading to the Master of Divinity degree provides for foundational courses in Biblical, historical, theological, and ministry studies, representative of the tradition and regarded as indispensable background for subsequent

elective work and individual program information. These required courses total eight of the twenty-four courses necessary for graduation. They are Old Testament 11, New Testament 18, Church History 13 and 14, American Christianity 28, Christian Theology 32, Christian Ethics 33, and Black Church Studies 124. The opportunity of advanced standing adds further variability to the academic program, depending upon the nature and quality of the student's undergraduate academic work. Sixteen courses, two-thirds of the required total, are available for working out an individualized program of studies leading to specialized preparation in academic depth and for purposes of professional ministerial competence.

Required courses may be staffed by one or more professors and are planned to treat subject matter both in scope and depth at the graduate level.

The formulation of the student's course of studies is guided by certain broad but normative recommendations for area distribution of courses and by the advice and counsel of appointed faculty advisers or authorized directors.

Students and advisers are directed to read diligently the paragraphs on elective studies and professional aims and distribution of elective studies in the section entitled Administration of the Curriculum.





All academic programs are subject to review and emendation by the Dean and the Associate Dean for Curricular Affairs for the fulfillment of the aims of the curriculum. The declared vocational and professional objective of the student is of central importance both to the student and to the faculty adviser in planning the student's comprehensive study program.

Six semesters of residential study are ordinarily required for the completion of the degree. With permission of the Associate Dean for Curricular Affairs certified nonresidential study, not exceeding the equivalent of eight courses, may be permitted to a candidate for the basic degree.

The normal academic load is four courses per semester. A student with demonstrated competence may, with the consent of the academic adviser and the Associate Dean for Curricular Affairs, enroll for an additional course in the middler and senior years.

**General Features of the Basic Curriculum.** The following is a brief summary of the basic curriculum.

1. Twenty-four courses and six or more semesters of residency are required for graduation.
2. Each student is required to complete two approved assignments in field education (with or without remuneration) under supervision. Such assignments might include an internship, a summer of full-time work, two semesters of part-time work, or involvement in church or community service. The essential criteria for graduation credits are that the amount and quality of supervision be approved by the Office of Field Education, and that the student be required to evaluate and correlate the experience directly.
3. A normal academic load is four courses with credit.

With the approval of the academic adviser, a student may register, preferably not in the same semester, for one or two units of independent study under faculty supervision and/or one or two courses of cognate studies of graduate standing in Duke University. Enrollment for cognate graduate courses outside the University, including studies abroad, must have the prior approval of the Associate Dean for Curricular Affairs.

## A SUGGESTED CURRICULAR PARADIGM

### Junior Year

#### *Fall Semester*

Old Testament 11  
Church History 13  
Elective  
Elective

#### *Spring Semester*

New Testament 18  
Church History 14  
Elective  
Elective

### Middler Year

#### *Fall Semester*

Systematic Theology 32  
American Christianity 28  
Elective  
Elective

#### *Spring Semester*

Christian Ethics 33  
Black Church Studies 124  
Elective  
Elective

### Senior Year

#### *Fall Semester*

Four elective courses (including  
CH 139 or 140 for United  
Methodist students)

#### *Spring Semester*

Four elective courses (including  
CP 155-A and HT 261 for United  
Methodist students)

# Administration of the Curriculum

**General Regulations.** The following regulations pertain to students enrolled in the regular curriculum:

1. Full-time students should ordinarily enroll for the required courses of the curriculum or for alternative courses offered for advanced standing in the order suggested in the master schedule of the curricular paradigm.
2. Students in programs leading to either the Master of Divinity or Master of Religious Education degree are required at the time of each registration period to plan their course of study with the consultation and approval of their assigned faculty advisers. Such programs are subject to the review and approval of the Committee on Academic Standing, the Dean, and the Associate Dean for Curricular Affairs.
3. Students in candidacy for the Master of Divinity degree who serve as full-time pastors or work more than fifteen hours per week in addition to their academic course work are advised that their programs will usually require a fourth academic year. Modification of this schedule requires the approval of the Associate Dean for Curricular Affairs on recommendation of the Assistant Dean for Field Education.
  - a. Students with pastoral charges, or comparable extracurricular responsibilities, ordinarily will enroll for not more than three courses.
  - b. Students who accept pastoral charges in their middler or senior years are required to have the prior approval of the Assistant Dean for Field Education. Such students will be required to restrict their course work in accordance with regulation 3a stated above.
  - c. Modifications of these regulations will be scrupulously administered. Academic achievement, normally a *B* average, must be demonstrated before any modification of these requirements is allowed. Since adequate indication of the student's academic proficiency is not available before the completion of the first academic year, no modification of regulation 3a is possible for junior students.
  - d. Ordinarily a student may not commute more than fifty miles (one way). Students living farther away than this will be required to live on campus during the academic week.
4. Student assistant pastors (not pastors-in-charge) may enroll for a full academic load if they are not on probation, if they are under the supervision of the Assistant Dean for Field Education, and if their field duties involve no more than fifteen hours per week.
5. A student in candidacy for the Master of Divinity or Master of Religious Education degree is expected to enroll for no less than three courses in any semester. Exceptions require approval of the Associate Dean for curricular affairs.
6. Study abroad, with transferable credit toward graduation, may be allowed for a candidate for the Master of Divinity degree by approval of the Associate Dean for Curricular Affairs. A strong academic record is a prerequisite. Ordinarily, permission for such study may be granted to students who have completed the work of the middler year. Both the institution abroad and a specific course of study proposed must have the prior approval of the Associate Dean for Curricular Affairs.
7. Transfer of credit to the Divinity School of Duke University, leading to candidacy for the degree of Master of Divinity, will normally be limited to one-third and may not exceed more than one-half of the academic credits (in proportional evaluation) required for fulfillment of degree candidacy (see the chapter on Admission).

8. Auditing of courses is permitted on notice to the Associate Dean for Curricular Affairs and by permission of the faculty instructor concerned. Auditors who are not candidates for degrees are charged an audit fee.
9. Students in candidacy for a degree who secure minor employment outside the channels of the Office of Field Education are required to inform the Assistant Dean for Field Education. Students carrying an outside employment workload of more than fifteen hours weekly will be required to limit their academic load.
10. Students may, with permission of their faculty advisers and the instructors involved, take one or two units of independent study. These independent study courses are ordinarily subjects at an advanced level which cover material not available in the regular curriculum. Students wishing to take more than two courses by independent study must have permission from the Associate Dean for Curricular Affairs in consultation with the student's faculty adviser and the instructor who directs that independent study.
11. Ordinarily it is expected that the work for the Master of Divinity degree be completed in three academic years (four for students who are on probation, who serve as pastors, or who serve internship years). Extension of the student's work beyond six years from initial matriculation requires the approval of the faculty.
12. A student wishing to take a leave of absence for one or two semesters, and intending to return to a degree program in the Divinity School, should so notify the Associate Dean for Curricular Affairs in writing in advance. No leave of absence will be granted for more than one full academic year.

Students deciding to withdraw from the Divinity School, for whatever reason, should notify the Associate Dean for Curricular Affairs in writing prior to withdrawal. All students who have officially withdrawn or whose leave of absence extends beyond one academic year but who wish later to return to the Divinity School will be required to reapply for admission and provide whatever documentation is required by the Director of Admissions.

13. Each entering student is assigned a faculty adviser, who must approve the student's proposed course of study at the time of registration each semester, and who is available for personal consultation on other matters relating to professional growth.

**Advanced Placement.** Students may, on the basis of undergraduate courses, a religion major, or other substantial preparation, apply for advanced placement in one or more of the eight required subjects. The appropriate division (Biblical, historical, or theological) will set procedures for determining basic competence in the particular field, ordinarily by an examination and assigned paper. A student may apply for such testing only once in a single area, not later than the beginning of the fourth semester.

Students who qualify for advanced placement in any of the eight areas will then be eligible to fulfill their graduation requirements in that field by taking an upper level course in the same subdivision instead of the introductory core course. They are not exempt from all work in that field.

**Curricular Provisions and Procedures.** Admission to candidacy for the Master of Divinity degree is admission to the regular program of studies. The suggested paradigm defines the normal sequence of the student's developing program. Students enrolled for less than three courses are considered part-time and are not eligible for financial aid or student health services.

The curriculum intends to serve graduate-professional aims with maximum flexibility. Sixteen elective courses are available and may be programmed to satisfy

vocational and professional preferences. In planning a course of study, the student, in consultation with the adviser, should choose a program which will give a broad understanding and appreciation of future professional responsibilities. Members of the faculty and staff welcome inquiries.

Professional ministries include those of the parish, preaching, teaching, and pastoral care; ministries of education in local churches and higher education; missions; campus ministry; specialized urban and rural ministries; chaplaincies—hospital, institutional, industrial, and military; teaching; religious journalism; audiovisual communications; church agencies; and ecumenical ministries at home and abroad. For many of these, further specialized training will necessarily be sought elsewhere beyond the basic degree. For all of these ministries the student's program of studies can be shaped for the particular ministry in view.

Students are encouraged to elect one course in each of the following areas or subdivisions of the curriculum beyond the required courses. The course should be selected with a view to the individual student's vocational and professional aims: American Christianity; history of religion; Christian education; world Christianity and ecumenics; Biblical exegesis; pastoral psychology; Christian ethics; worship and preaching; care of the parish (including church and community). Students are also encouraged to concentrate, usually in not more than five courses in any one subdivision of the curriculum, in an area directly related to their vocational and professional intention. The program of each student is subject to review and revision by action of the faculty adviser, the Committee on Academic Standing, the Associate Dean for Curricular Affairs, or the Dean.

## General Information

**Ordination and Disciplinary Requirements.** Students preparing for ordination are strongly advised to fulfill denominational requirements for study of church doctrine and polity. United Methodist students must attend to regulations of the 1976 Discipline, paragraph 421. The following courses have ordinarily been accepted as fulfilling requirements of the Discipline: CT 32, HT 261, CH 14, CH 139, CH 140, CP 155–A. Most annual conferences also require one or more courses in preaching and worship.

Students from other denominations should consult with their appropriate church bodies for specific requirements. Polity courses for certain other denominations may be offered from time to time by faculty members or local clergy on prior request.

**Graduation Requirements.** Graduation requirements consist of satisfactory completion of twenty-four courses, including the eight basic courses or their equivalent, with an overall grade point average of C (2.0) or better, plus satisfactory completion of two units of field education with appropriate seminars. It is the responsibility of each student to see that all requirements for graduation are met, and that any special permission granted to deviate from the normal program is properly recorded on the personal files in the registry.

**Grading System.** As of the academic year 1971–72, the Divinity School employs the grading scale with the following letters, *A*, *B*, *C*, *D*, and *F* which have been defined as follows: *A*, excellent; *B*, good; *C*, satisfactory; *D*, passing; *F*, failure; *WI*, withdrew illness; *W*, withdrew, discretion of the dean; *I*, incomplete; *P*, passed; *NC*, noncredit; *Z*, year course. At the discretion of the instructor, individuals or classes may in certain instances be graded simply as pass or fail. Such *P/F* grades, no more than 25 percent of a student's total record, will not be figured in the grade point average.

The denotations are defined as follows according to quality points: *A*, 4; *A*–, 3.7; *B*+, 3.3; *B*, 3.0; *B*–, 2.7; *C*+, 2.3; *C*, 2.0; *C*–, 1.7; *D*+, 1.3; *D*, 1.0; *D*–, 1.0; *F*, 0.



**Probation.** Students whose work after admission is not satisfactory may be placed on probation by the Academic Standing Committee and required to reduce their course loads or to make other academic adjustments. Students who during the first year of Divinity School maintain less than a C (2.0) average, including failures, ordinarily will be required to withdraw from the School.

**Incompletes.** A student may petition the Associate Dean for curricular affairs to receive a grade of incomplete in a course. This petition must be filed in writing on the prescribed form with the registry on or before the last official day of classes of the semester in question. Such permission may be granted when a student, through some circumstances beyond control, such as illness, has been hindered from meeting the course requirements. Adjudication of the petition will rest with the Associate Dean and the instructor concerned. The Associate Dean will communicate in writing to the student regarding the joint decision and any conditions attached thereto. An incomplete becomes an F unless it is removed through completion of assigned work by the following dates: for incompletes incurred in fall semester courses, 1 February; for incompletes incurred in spring semester courses, 15 September.

**Change of Course or Withdrawal.** Students are permitted to change their registrations for course work without incurring a penalty during the prescribed drop/add period at the beginning of each semester. However, any alteration in the total number of courses previously registered must be recorded during the official registration day prior to the opening of classes; no refunds will be granted after that date. The adding of a course requires the permission of the instructor of that course as well as the student's faculty adviser.

No student will be permitted to withdraw from a course after one-half of the period of instruction of the course without incurring failure, except for causes adjudged by the Associate Dean for Curricular Affairs to be beyond the student's control. Conditions of emergency and not considerations of convenience shall be regarded as determinative in considering requests.

**Leave of Absence and Withdrawal.** A student wishing to leave school for not more than two semesters and resume studies at a later date must file a request for leave of absence with the Associate Dean for Curricular Affairs. Such a leave of absence becomes an automatic withdrawal, necessitating application for readmission, unless an extension has been granted in advance by the Associate Dean.

Students wishing to withdraw from the Divinity School should consult with their faculty advisers and the Associate Dean, and must file a written statement of withdrawal with the registry.

**Graduation with Distinction.** Students who achieve a grade point average of 3.85 for overall academic records in the Divinity School are granted the degree of Master of Divinity, Master of Theology, or Master of Religious Education, *summa cum laude*. Students with a grade point average of 3.65 are awarded such degrees, *magna cum laude*. Such distinction is specified on their diplomas.

## The Master of Religious Education Degree

The course of study leading to this degree is designed for persons desiring to prepare for leadership and service in the educational ministry of the church.

**Admission.** Applications for admission to the Master of Religious Education program are evaluated by the same standards as those applicable to the Master of Divinity degree, and admission requirements and procedures are also the same. Students planning to specialize in Christian education should study the sections of this bulletin which contain statements of policy regarding the most appropriate prerequisite studies for theological education and the procedures to be followed in applying for admission.

**Requirements.** The Master of Religious Education degree usually requires two years, or four semesters, of residence and study and the fulfillment of the following requirements:

- 1. Sixteen courses, twelve of them limited electives and four free electives, selected by the candidate in consultation with the academic adviser.
- 2. A final comprehensive examination.

**Program of Study for M.R.E. Degree**

Limited electives*	12
Two courses in the Biblical Division	
Two courses in the Historical Division	
Two courses in the Theological Division	
Two courses in the Ministerial Division (other than Christian Education).	
Four courses in Christian Education	
Free electives†	3
Cognate courses in another department†	<u>1</u>
	16
Final Comprehensive Examination	

\*Limited electives may be completed through tutorials, if approved by the student's faculty adviser and the instructor(s) involved, provided the total number of tutorials is ordinarily no more than two.

†Free electives and cognate courses must be chosen by the student in consultation with the academic adviser and subject to the approval of the associate dean for curricular affairs

**The Master of Theology Degree**

The course of study leading to the degree of Master of Theology is designed for graduates of accredited theological schools who desire to continue or resume their theological education for enhancement of professional competence in selected areas of study. Enrollment in the Th.M. degree program is open to a limited number of students who have received the M.Div. (or the equivalent) with superior academic records.

Inquiries on admission may be addressed to the director of admissions for referral to the director of the Th.M. program.

**General Requirements.** The general requirements for the degree of Master of Theology are:

- 1. Eight course units of advanced studies, with an average grade of *B* (3.0 average on a 4.0 scale).
- 2. Superior performance in a comprehensive examination covering the major area of study. As an alternative to the comprehensive examination the student may elect to do a research project in one major area if approved by the supervising professor. This project shall carry one course credit, to be counted within the eight units required.
- 3. Residence for one academic year.

There are no general language requirements. However, classical or modern languages may be required for certain programs (for example, in Biblical studies, Hebrew or Greek may be required).

**The Program of Study.** At least four of the required eight courses must be taken in one of the basic divisions of study (Biblical, historical, theological, or ministerial) which shall be designated as the candidate's major, and at least two courses in another of the divisions which shall be designated as the candidate's minor. Ordinarily, no more than two units may be taken through directed reading,

and no more than one of these in any one semester. In the area of pastoral psychology, up to four course units may be taken through clinical pastoral education.

The comprehensive examination will be given at the close of the course of study for the degree, ordinarily in May or September.

The entire program of studies and comprehensive examination should be completed within twelve months. In some cases, the time limit may be extended, but in no case beyond three years.

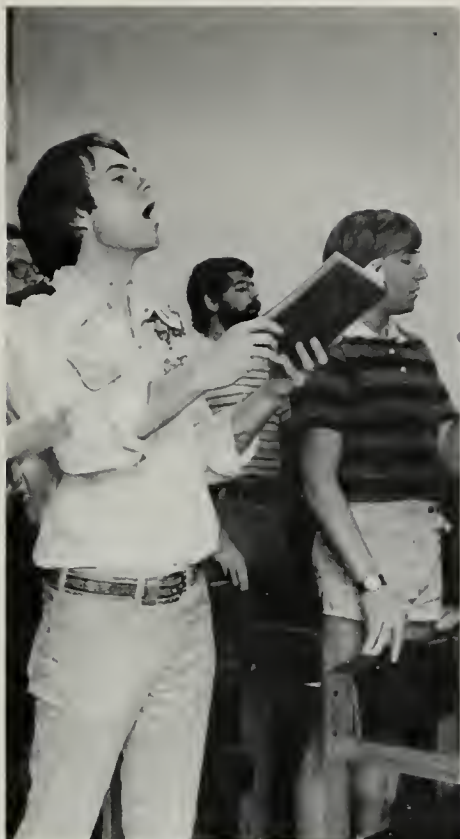
The candidate majoring in pastoral psychology may plan one of three programs or concentrations: a concentration in pastoral theology relating psychology and theological understanding to professional ministry, especially the parish, through course work and supervised clinical experience; a concentration in pastoral care through course work and an intern year in basic clinical pastoral education; a concentration in pastoral counseling through course work and a year of advanced clinical pastoral education. In the context of clinical pastoral education various professional goals may be sought, including general understanding and skills in pastoral care and specialization in pastoral counseling and clinical supervision. The Clinical Pastoral Education Program is certified by the Association for Clinical Pastoral Education. Persons specializing in pastoral counseling will be moved toward certification with the American Association of Pastoral Counselors. Course PP 277A (or its equivalent) is considered a prerequisite for a major in pastoral psychology, but is not applicable toward the eight courses required for the degree, although it will be indicated on the student's transcript. Accordingly, the student majoring in this area should ordinarily make provision for a program extending for a full calendar year beginning the first week in June.

**Financial Aid.** Please note in the pertinent sections of the chapter on Financial Information that the charges for tuition and general fee for the Th.M. degree are combined and are made on the basis of the number of courses taken, and that in order to be eligible for medical care a student must be taking at least three courses.

## Special Programs

Duke Divinity School is a participant in the National Capital Semester for Seminarians conducted by Wesley Theological Seminary in Washington, D.C. Students may, with the approval of the Associate Dean for Curricular Affairs, enroll in this one semester program focussed on political issues and social ethics, and receive up to four transfer credits. Applicants must have completed at least two and not more than four semesters at Duke to be eligible.

The joint degree program between the Divinity School and the Institute of Public Policy Sciences at Duke is being discontinued because of the difficulty in coordinating different courses on different schedules with different grading systems. However, students interested in policy sciences are encouraged to select cognate courses in the institute and to explore the possibility of earning a Master of Arts in Policy Sciences during a fourth year at Duke, either on leave during their seminary course or after the completion of the Master of Divinity degree.





# Courses of Instruction



## Course Enrollment

The required courses of the curriculum are: Old Testament 11, New Testament 18, Church History 13 and 14, American Christianity 28, Christian Theology 32, Christian Ethics 33, and Black Church Studies 124. Other courses numbered through 199 are elective courses for Divinity School students only. Most courses numbered 200 and above are approved for credit by both the Divinity School and the Graduate School, and require the permission of the instructor. For other prerequisites the student should consult the roster of courses of instruction in this bulletin and should also refer to published registration advices at the time of registration for each semester.

Courses jointly approved by the Divinity School and the Graduate School of Duke University are published in the *Bulletin of the Divinity School*. Courses offered in the Department of Religion of Duke University, or as cognate courses in other departments, must be of graduate level (numbered 200 or above) in order to fulfill requirements for degrees in the Divinity School.

## Projected Course Offerings

The following list of proposed course offerings for the 1979–80 academic year is tentative and subject to change. Detailed listings are available at the time of preregistration in the middle of the preceding semester, and more distant plans may be ascertained by consulting the divisional representative or the instructors concerned.

### Fall Semester 1979

Old Testament (OT): 11, 101, 115, 207, 220, 223–A, 302, 350.  
New Testament (NT): 103, 105, 226–B, 226–E, 314  
Church History (CH): 13, 140.  
Historical Theology (HT): 123, 241, 246, 338.  
American Christianity (AC): 28, 199, 378.  
Christian Theology (CT): 32, 220, 225, 229, 325.  
Christian Ethics (CHE): 33, 242, 262, 291, 388.  
World Christianity (WC): 135, 156.  
Care of the Parish (CP): 128, 152, 154, 189.  
Christian Education (CED): 105, 228, 231.  
Pastoral Psychology (PP): 164, 170, 173, 176–D, 277–B, 278, 281–B.  
Preaching (PR): 30.  
Church Worship (CW): 178.

## Spring Semester 1980

Old Testament (OT): 106-E, 116, 130, 242, 351.  
New Testament (NT): 18, 104, 116-A, 227-A, 341.  
Church History (CH): 14  
Historical Theology (HT): 261.  
American Christianity (AC):  
Christian Theology (CT): 101, 110, 200, 210, 211, 215, 220, 226, 272, 303.  
Christian Ethics (CHE): 33, 112, 130, 244, 291, 394.  
Black Church Studies (BCS): 124.  
World Christianity (WC): 135.  
Care of the Parish (CP): 129, 155-A, 157, 179.  
Christian Education (CED): 101, 202, 231.  
Pastoral Psychology (PP): 170, 175, 178, 273, 277-C, 281-C.  
Preaching (PR): 30.  
Church Worship (CW): 166, 178, 180, 250.

Since 1976 all courses are counted as of equal value in fulfilling graduation requirements of twenty-four course units and in computing grade point averages.

## I. Biblical Studies

### OLD TESTAMENT

**11. Introduction to Old Testament Interpretation.** An introduction to the literature, history, and religion of ancient Israel with emphasis upon exegetical methodology. *Bailey and Murphy*

**101. The Prophetic Movement.** A study of the prophetic movement in Israel from the earliest period to the postexilic development of apocalyptic with special reference to the content and religious teaching of the prophetic writings. *Efird*

**106. Exegesis of the English Old Testament.** Prerequisite: OT 11 or equivalent.

106A. Genesis. *Bailey*

106B. Amos and Hosea. *Bailey*

106D. Wisdom Literature in the Old Testament. *Murphy*

106E. Old Testament Psalms. Exegesis of various literary types; theological orientation of Old Testament liturgical prayer; implications for prayer and liturgy today. *Murphy*

**109. The Religion of the Old Testament.** A study of the religious ideas contained in the Old Testament with special reference to their interpretation from Robertson Smith to the present. *Efird*

**115-116. Introduction to Biblical Hebrew.** Elements of phonology, morphology, and syntax. Exercises in reading and writing Hebrew. Exegetical treatment of the book of Jonah. (Two semesters: no credit will be given for 115 without completion of 116.) *Bailey*

**130. Dying and Death.** Critical consideration of Biblical, legal, medical, and ethical perspectives. Prerequisites: OT 11, NT 18, or equivalents. *Bailey, H. Smith, and others*

**207. Intermediate Biblical Hebrew I.** Historical Hebrew grammar with reading and exegesis of Old Testament prose (Pentateuch and historical books in alternate years). *Wintermute*

**208. Intermediate Biblical Hebrew II.** Historical Hebrew grammar and rapid reading of prose and poetry. *Meyers*

**209. Old Testament Theology.** Studies of the Old Testament in regard to theological themes and content. Prerequisite: OT 11 or equivalent. *Murphy*

**220. Rabbinic Hebrew.** An interpretive study of late Hebrew, with reading from the Mishnah. *Davies or others*

**223. Exegesis of the Hebrew Old Testament.** Prerequisite: OT 115–116.

223A. Amos and Hosea. Stress on hermeneutical method. *Bailey*

223B. Job. *Murphy*

223C. Exodus. *Bailey*

223D. Song of Songs. *Murphy*

223E. Ecclesiastes. *Murphy*

**237. History of the Ancient Near East.** Emphasis upon the religions, literature, and art of Mesopotamia. *Bailey*

**242. Life after Death in Semitic Thought.** Consideration of the various ideas from the early second millennium through the Intertestamental Period. Exegesis of selected Old Testament passages. Evaluation of recent research. Prerequisite: OT 11 or equivalent, knowledge of Hebrew helpful but not required. *Bailey*

**302. Studies in the Intertestamental Literature.** Selected documents of the Apocrypha and Pseudepigrapha examined exegetically and theologically in their relation to postexilic Judaism. *Staff*

**304. Aramaic.** A study of the Aramaic portions of the Old Testament and selected passages from the Elephantine and Qumran texts. *Wintermute*

**350, 351. Seminar in Old Testament.** Research and discussion on selected problems in the Old Testament and related fields. *Murphy*

**353. Seminar on Text Criticism.** Emphasis upon transmission, versions, apparatus, and method. Prerequisites: NT 103–104 and OT 115–116 or equivalents. *Bailey and others*

**373–374. Elementary Akkadian.** Study of the elements of Akkadian grammar. Reading of neo-Assyrian texts shedding light on the Old Testament. Prerequisite: Biblical Hebrew. (Two semesters: not credited separately.) *Bailey*

**375–376. Elementary Ugaritic.** Study of the elements of Ugaritic. Prerequisite: Biblical Hebrew. (Two semesters: not credited separately.) *Staff*

## NEW TESTAMENT

**18. Introduction to New Testament Interpretation.** An introduction to the literature of the New Testament with special attention to the perspectives and methods of historical-critical investigation and interpretation. *Efird or M. Smith*

**103–104. Hellenistic Greek.** Designed for beginners to enable them to read the Greek New Testament. (Two semesters: no credit will be given for 103 without completion of 104; however, students with at least one full year of college Greek may be permitted to enroll in 104.) *Efird*

**105. Studies in Paul.** An investigation of Paul's apostolate based upon the Acts and the Epistles with attention to Paul's theology as reflected in selected passages. *Efird*

**114. Jesus in the Gospels.** A consideration of the origins, transmissions, and literary fixation of the Jesus traditions with special attention to the message of the Kingdom, the problem of messianic self-consciousness, and the passion. *M. Smith*

**116. Exegesis of the English New Testament I.** *Staff*

116A. Luke-Acts

116B. Galatians

116C. The Pastoral Epistles

116D. I and II Corinthians



**117. Exegesis of the English New Testament II. Staff**

117A. The Gospel and Epistles of John

117B. Romans

117C. Revelation

117D. Mark

**118. The New Testament in Greek. Readings in the Gospels. Staff**

**119. The New Testament in Greek. Readings in the Epistles. Staff**

**225. Living Issues in New Testament Theology.** Critical examination of major problems and issues in New Testament interpretation and theology. Prerequisite: NT 18 or equivalent. *M. Smith*

**226. Exegesis of the Greek New Testament I.** Prerequisite: NT 103–104. *Price, M. Smith, or Young*

226A. Mark and Matthew

226B. Romans

226D. I and II Corinthians

226E. Gospel and Epistles of John

**227. Exegesis of the Greek New Testament II.** Prerequisite: NT 103–104. *Price, M. Smith, or Young*

227A. Luke-Acts

227B. Galatians

227C. The Pastoral Epistles

**311. Pharisaic Judaism in the First Century.** A reading course in first-century Pharisaic Judaism. *Davies*

**312. Pauline Theology.** Studies in some aspects of Paulinism in the light of recent scholarship. *Davies*

**314. Judaism and Christianity in the New Testament.** A study of their interaction with special attention to Paul. *Davies*

**319. The Gospel According to St. Matthew in Recent Research.** *Davies*

**340, 341. Seminar in the New Testament.** Research and discussion on a selected problem in the Biblical field. *Price and M. Smith*

**345. The Epistle to the Hebrews in Recent Research.** *Davies*

## **II. Historical Studies**

### **CHURCH HISTORY**

**13. History of the Church to the Protestant Reformation.** A survey through the fifteenth century in terms of spiritual genius, organizational development, great literature, and representative movements. *Gregg*

**14. History of Modern European Christianity.** A survey of the main currents in Reformation and post-Reformation church history. *Raitt and Steinmetz*

**105. Studies in Patristic Christianity.** Selected issues in the worship, theology, and politics of the early Church. *Gregg*

**126. The English Reformation.** The religious history of England from the accession of Henry VIII to the death of Elizabeth I. Extensive readings in the English reformers from Tyndale to Hooker. *Steinmetz*

**139. Methodism.** A study of Methodist societies in England and the developing church in America as they gave rise to such historic issues as polity, education, division, and reunion. Prerequisite: CH 13–14. *Baker*

**140. The Rise of Methodism and the Anglican Background.** The Methodist societies within the Church of England to the death of Wesley. Prerequisite: CH 13–14. *Baker*

(Students are advised that either CH 139 or CH 140 will satisfy the United Methodist Discipline requirement.)

**145. The Later Reformation and the Rise of Protestant Orthodoxy.** Problems in Protestant theology before Kant. Extensive readings in the classic dogmatists of the Lutheran and Reformed traditions. *Raitt*

**201. Schism and Heresy in Early Christianity.** Studies of crises precipitated by movements such as Gnosticism, Donatism, Arianism, and Pelagianism. *Gregg*

**202. Religion of the Cappadocian Fathers.** Examination of the careers and writings of Basil, Gregory of Nyssa, and Gregory of Nazianzus. *Gregg*

**206. Christian Mysticism in the Middle Ages.** Source studies in historical perspective of such late medieval mystics as Bernard of Clairvaux, the Victorines, Ramon Lull, Meister Eckhart, Richard Rolle, Catherine of Siena, and Nicholas of Cusa. Prerequisite: CH 13. *Raitt*

**236. Luther and the Reformation in Germany.** The theology of Martin Luther in the context of competing visions of reform. *Steinmetz*

**247–A, B. Readings in Latin Theological Literature.** Critical translation and study of important theological texts in Latin from various periods of the history of the church. Prerequisite: reading knowledge of Latin (introductory course offered in the classics department). *Staff*

**334. Theology and Reform in the Later Middle Ages.** Examination of selected issues in the life and thought of the medieval church from the twelfth century through the fifteenth century. Readings in popular and academic theologians from Pierre Abelard to Gabriel Biel. *Steinmetz*

**335. The English Church in the Eighteenth Century.** Studies of Christianity in England from the Act of Toleration, 1689, to the death of John Wesley, 1791. *Baker*

**339. The Radical Reformation.** Protestant movements of dissent in the sixteenth century. Special attention will be devoted to Muntzer, Carlstadt, Hubmaier, Schwenckfeld, Denck, Marpeck Socinus, and Menno Simons. *Steinmetz*

**344. Zwingli and the Origins of Reformed Theology.** Source studies in the early Reformed tradition. *Steinmetz*

## **HISTORICAL THEOLOGY**

**114. Christologies of the Early Church.** Investigation of important soteriologies and debates centering upon the person of Christ from the second through the fifth centuries. *Gregg*

**120. Christian Thought in the Middle Ages.** A survey of the history of Christian theology from St. Augustine to the young Martin Luther. *Steinmetz*

**121. Readings in Sacramental Theology.** The sacraments in the history of Christian thought. *Raitt*

**123. Readings in Historical Theology.** Prerequisite: CH 13–14. *Staff*

**141. Women, Religion, and Theology.** An historical study of fundamental religious perceptions and theological interpretations of woman. *Raitt*

**204. Origen.** The systematic and apologetic writings of an important Alexandrian thinker and exegete of the third century. *Gregg*

**219. Augustine.** The religion of the Bishop of Hippo in the setting of late antiquity. *Gregg*

**241. Problems in Reformation Theology.** Prerequisite: permission of the instructor. *Steinmetz*

**246. Problems in Historical Theology.** Prerequisite: permission of the instructor. *Raitt*

**251. The Counter-Reformation and the Development of Catholic Dogma.** Issues in Roman Catholic theology from the Reformation to the Second Vatican Council. *Raitt*

**252. Nineteenth- and Twentieth-Century Roman Catholic Theology.** Examination of Roman Catholic Theology from Vatican I to the present, with special attention to "modernism" and the work of Vatican II. *Raitt*

**260. Life and Thought of the Wesleys.** A seminar on John and Charles Wesley and their colleagues in relation to English culture and religion in the eighteenth century. Prerequisite: permission of the instructor. *Baker*

**261. The Theology of John Wesley.** A study of the development and structure of Wesley's theology with special reference to his doctrines of man and salvation. *Richey*

**308. Greek Patristic Texts.** Critical translation and study of selected Greek texts illustrative of significant aspects of patristic theology and history from the second through the fifth century A.D. *Young*

**313. The Apostolic Fathers.** A study of the religious thought in the writings of the Apostolic Fathers. *Young*

**317. Seminar in the Greek Apologists.** A study of the apologetic writings of the Greek Fathers in relation to the challenges of their contemporary world. Special attention will be given to leading protagonists of late Graeco-Roman culture, such as Celsus, Porphyry, and Julian. *Young*

**318. Seminar in the Greek Fathers.** A study of selected topics from the Greek Fathers. *Young or Gregg*

**337. Theology of St. Thomas Aquinas.** Intensive reading in the *Summa Theologica* and Biblical commentaries. *Raitt*

**338. Calvin and the Reformed Tradition.** The theological development of John Calvin. A comprehensive examination of his mature position with constant reference to the theology of the other reformers. *Raitt or Steinmetz*

## AMERICAN CHRISTIANITY

**28. History of American Christianity.** A consideration of the nature of Christianity in America and the history of its development. *Henry and Newsome*

**127. Modern American Religious Leaders.** Recent American Christianity as seen through selected biographical studies. *Newsome*

**199. The American Social Gospel.** A study of Protestant social thought and action in America since 1865. *Newsome*

**296. Religion on the American Frontier.** A study of the spread of evangelical Christianity as a theological and cultural phenomenon of the American West. *Henry*

**377. Contemporary American Theater and Evolving Theological Forms.** An examination of creed and ritual implicit and explicit in contemporary American theater of stage, film, and television. *Henry*

**384. Religious Dissent in American Culture.** History and significance of dissent in the theology and culture of America. *Henry*

**385. Religion in American Literature.** A critical study of the meaning and value of religious motifs reflected in American literature. *Henry*

**395. Christian Thought in Colonial America.** Exposition of the main currents in Protestant theology. *Henry*

**396. Liberal Traditions in American Theology.** A study of the main types of modern religious thought, beginning with the theology of the Enlightenment. *Henry*

**397. Contemporary American Theology.** A critical appraisal of major tendencies. *Henry*

## HISTORY OF RELIGIONS

**180. Introduction to Asian Religions.** Preliminary consideration of problems and methods in the study of religious traditions, followed by a survey of the historical development, beliefs, practices, and contemporary significance of the Islamic religion and the religions of India, China, and Japan. *Staff (Department of Religion)*

See other courses offered in the Department of Religion.

## III. Theological Studies

### CHRISTIAN THEOLOGY

**32. Christian Theology.** The major themes of the theology of the church. *Herzog, Langford, and Robinson*

**101. Types of Religious Philosophy.** Basic historical orientation of religious thought, especially in Western culture. *Robinson*

**102. Science and Biblical Theism.** Implications of scientific knowledge in relation to Biblical understandings of creation, revelation, and providence. *Robinson*

**108. Major Types of Protestant Theology.** A survey of Protestant theology from the reformers to Karl Barth. (For juniors only.) *Herzog or Langford*

**110. This Life and the Age to Come.** Christian eschatology and the meaning of history in the light of God's triumph over sin, suffering, and death. *Robinson*

**111. A Christian Faith-Understanding of God.** A systematic examination of Biblical and philosophical concepts of God in relation to the life of Christian faith. *Robinson*

**200. The Person and Work of Christ.** The problem of knowledge of Christ and formulation of a doctrine of his work and person in the light of Biblical eschatology. *Staff*

**210. Contemporary British Theology.** Selected problems in representative British theological writings after 1900. *Langford*

**211. Authority in Theology.** The idea and function of authority in theology. *Langford*

**212. The Doctrine of the Holy Spirit.** A study of the person and work of the Holy Spirit. *Langford*

**215. The Nature and Mission of the Church.** Christian understandings of the church—Biblical, historical, contemporary—with a view toward ecumenical doctrinal construction. *Herzog*



216. **Kierkegaard Studies.** Critical examination of selected works. *Robinson*
220. **Theological Explorations.** A seminar on contemporary theological issues, content to be designated by the theological division. *Staff*
225. **The Christian Understanding of Human Nature and Destiny.** Representative historical and recent theological interpretations of human nature, predicament, deliverance, and possibility. *Richey*
226. **Theology and Contemporary Secular Understandings of Man.** Critical theological examination of selected current interpretations of human nature and the human situation. *Richey*
229. **Tragedy and Christian Faith.** An analytical and constructive philosophical interpretation of the fundamental tragic dimension of human life in the light of a Christian theological understanding. *Robinson*
272. **Theology of Paul Tillich.** An examination of Tillich's philosophical theology. *Robinson*
300. **Systematic Theology.** Method and structure of systematic theology, the doctrine of God, theological anthropology, and Christology. Prerequisite: CT 32 or equivalent. *Herzog or Langford*
303. **Philosophical Method in Religious Studies.** Gadamer, Habermas, and Ricoeur applied to Christian theology in Europe. *Herzog*
320. **Theology, Power, and Justice.** Critical examination of a major theme of modern thought in Schleiermacher, Hegel, Marx, and Tillich. *Herzog*
322. **Nineteenth-Century European Theology.** Protestant theology from Kant to Herrmann. *Herzog*
325. **Philosophical Theology I.** Selected readings from Plato and Aristotle which helped to shape philosophical theology from Origen through Augustine and Aquinas. *Herzog*
326. **Philosophical Theology II.** Main problems of philosophical theology in the modern period.
328. **Twentieth-Century European Theology.** Critical examination of the thought of selected Protestant theologians from 1900 to 1950. Prerequisite: CT 32. *Herzog*
352. **Seminar in Christian Theology.** Research and discussion of a selected problem in the systematic field. *Staff*

## CHRISTIAN ETHICS

33. **Christian Ethics.** Theological assumptions, ethical principles, and their application to contemporary issues of Christian social policy. *Beach, Lacy, and H. Smith*
107. **The Biblical Bases of Christian Ethics.** Examination of major themes and moral teachings, principally in the Decalogue, the Gospels, and the Epistles, with application to some contemporary issues. Prerequisite: OT 11, NT 18, or equivalent. *H. Smith*
112. **Technology and Christian Ethics.** The impact of the technological revolution upon American culture, and a normative Christian response. *Beach*
113. **Contemporary Issues in Christian Morals.** Constructive examination of selected areas of public and private morality. *Edwards and H. Smith*
130. **Dying and Death.** Critical consideration of Biblical, legal, medical, and ethical perspectives. Prerequisites: OT 11, NT 18, or equivalents. *Bailey, H. Smith, and others*

**194. The Protestant Church and American Culture.** Analysis from the perspective of Christian ethics of current problems in the interpretation of church and culture with explicit reference to the parish setting. *H. Smith*

**198. Ethics from a Black Christian Perspective.** Analysis of the theological ethics of George Kelsey, Martin Luther King, Jr., Joseph R. Washington, James H. Cone, J. Deotis Roberts, and Major J. Jones. *Edwards*

**220. Ethical Explorations.** A seminar on contemporary ethical issues, the specific content in any given semester to be designated by the Theological Division. *Staff*

**230. Moral and Value Education.** A critical, theological investigation of Durkheim, Dewey, Simon, Kohlberg, Bull, Rokeach, and implications for education in church and society. Prerequisites: CHE 33 and CED 105. *H. Smith and Westerhoff*

**242. Human Sexuality.** Examination of biological, Biblical, cultural, and other aspects of human sexuality, together with analytical and constructive interpretation. Permission of instructor required. *H. Smith*

**244. Interdisciplinary Seminar in Medical-Legal-Ethical Issues.** A seminar composed of students and faculty from the Medical, Law, and Divinity Schools for critical consideration of selected pertinent issues of mutual professional interest. Prerequisite: permission of instructor. *H. Smith and others*

**245. Ethics in World Religions.** Moral foundations, assumptions, and applications in such historic faiths as Hinduism, Buddhism, Confucianism, and Islam, in the light of Christian ethical perspectives. *Lacy*

**262. Marxist Ideology and Christian Faith.** Comparative examination of Communist and Christian doctrines such as man, society, sin, history, and eschatology, together with an introduction to the contemporary dialogue. *Lacy*

**290. Current Problems in Christian Social Ethics.** A critical study of secularization, the technological revolution, and the ecological crisis. *Beach*

**291. Historical Forms of Protestant Ethics.** A survey of major types of Protestant ethical theory from Luther through contemporary figures. *Beach*

**294. Christianity and the State.** "Civil religion" in its historic development and contemporary expressions in America. Christian ethical premises of democratic political theory and practice. The relationships of church and state. *Beach*

**383. Moral Theology in the Twentieth Century.** Critical and comparative examination of ethical theory as exhibited in the work of selected contemporary theologians. *H. Smith*

**387. Ethical Method.** Selected methodological issues in contemporary theological ethics. *H. Smith*

**388. Ethics and Health Care.** A critical study of selected aspects of modern biomedical technology with special reference to the ethical assumptions informing their development and practice. *H. Smith*

**389. Christian Ethics and Contemporary Culture.** A study of the interaction between Christian thought and current secular social theory. *Beach*

## BLACK CHURCH STUDIES

**100. Introduction to Black Theology.** An examination of the historical roots of black theology with special attention to the treatments of traditional themes and problems in theology by black theologians and their rationale for the black theological enterprise. *Edwards*

**124. The Black Church in America.** A consideration of the historical and theological development of the separate black Christian denominations in America with attention to some of the major leaders, black worship, and black preaching. *Edwards and Newsome*

**126. Black Religion and Social Conflicts in America.** An examination of some of the reactions of black religious groups to the limits placed upon black people in American life, efforts made to break down racial barriers in society, and attempts to institutionalize black responses to such barriers. *Edwards*

**195. Theological Ethics of Howard Thurman.** An examination of the theology and ethics of Howard Thurman, with particular attention to the possible social utility of a theological ethics based on a form of Christian mysticism. *Edwards*

See also CHE 198. Ethics from a Black Christian Perspective.

## WORLD CHRISTIANITY AND ECUMENICS

**24. The Christian World Mission.** A study of theological foundations, guiding principles, and contemporary problems of the world Christian community. *Lacy*

**133. The Expansion of Christianity.** A survey of the spread of Christianity and the growth of the worldwide Church with special emphasis on nineteenth- and twentieth-century Protestantism in the non-Western world. *Lacy*

**135. Contemporary Issues in the World Church.** Analysis of political social, cultural, and religious conditions in a selected area of the world, and of theological-ethical insights and perspectives within the indigenous Christian community. *Lacy*

**156. The Ecumenical Movement.** Its contemporary development, structures, activities, and problems, against the background of church unity and disunity. *Lacy*

**386. Christianity in Dialogue with Other Faiths.** Contemporary currents of Christian thought as they relate to resurgent non-Christian religions and involve new formulations of a theology of mission. *Lacy*

## IV. Ministerial Studies

### THE CARE OF THE PARISH

**128. Church Management: Leadership and Participative Skills.** A study of the pastor's role as participant-facilitator with attention to organizational theory and facilitative skills employing the group workshop method of learning. *Ingram*

**129. The Pastor as Consultant to Church Organization.** A consideration of the pastor's role as organizational consultant with special emphasis on data gathering, diagnosis, and intervention using experiential learning designs. *Ingram*

**142. Women and Ministry.** Theological and practical issues related to women and ministry. *Staff*

**146. Church Building.** The role of the pastor in planning and executing building programs in the local church: architectural consideration and counsel, building requirements, and plans. *Nesbitt*

**148. Christian Stewardship and Church Finance.** A seminar to consider the principles of stewardship, education, budget-making, enlistment in church support. *Ingram*

**150. Church and Community.** The structure and dynamic factors shaping the present-day community together with their import for the work of the church. *Wilson*

**151. The Town and Country Church.** The small church, the circuit church, circuit administration, larger parish and group ministry, and the town and country movement. *Nesbitt*

**152. Evangelism and the Local Church.** A study of the nature, purposes, and methods of contemporary Christian evangelism with special attention to the local church. *Ingram*

**154. The Urban Church.** The function, nature, program, and administration of the effective city church and of the urban minister's distinctive task. *Wilson*

**155. Church Polity.**

155A. The United Methodist Church. A study of the history of Methodist government and contemporary polity. *Ingram*

155B. The Baptist Churches

155C. The United Church of Christ

155D. The Presbyterian Churches

**157. The Church and Social Change.** A sociological study of the relationship of the church to the process of social change, including the role of the church as innovator, the church as participant in social movements, method(s) of accomplishing change, and the religious leader as an agent of social change. *Herzog and Wilson*

**158. Contemporary Religious Sects.** The nature, ideology, development, clientele, and role of contemporary religious sects; the process by which such sects develop into established organizations; and their relationship to the mainline churches. *Wilson*

**179. Church Research.** Methods of research and survey for the gathering, analysis, and interpretation of church and community data, together with preparation and use of denominational statistics. *Wilson*

**189. The Multiple Staff Ministry.** Group work, leadership, and organizational theories as applied to staff ministries in large church and cooperative parish settings. *Ingram*

**220. Seminar in Contemporary Ministries.** A seminar in patterns and issues of contemporary ministries, content to be designated by the Ministerial Division. *Staff*

## CHRISTIAN EDUCATION

**101. Faith and Nurture.** Foundations in theology and educational theory for the teaching ministry of the Christian community. *Richey*

**105. Education as a Pastoral Ministry.** The nature of religious communities and the means by which they evolve, sustain, and transmit faith, values, and ways of life, with implications for evaluating, planning, and designing educational experiences within the total life of a congregation. *Westerhoff*

**167. Adult Education and the Ministry of the Laity.** A study of adult education and the ministry and mission of the laity in church and world and the ministry of teaching in the lay renewal of the church. *Richey*

**169. Major Issues in Christian Education.** Critical examination of selected issues in Christian education. *Richey*



**175. Liturgy and Education.** The nature and role of rites and rituals; learning, prayer, and the spiritual life; and education for baptism, confirmation, and the eucharist. *Westerhoff and Willimon*

**185. Religious Education and the Arts.** The place and the effect of imagination in religion and education, and the use of the arts in religious education. *Westerhoff*

**190. Pastor as Teacher.** The teaching process in relation to the purposes of Christian education, human growth and personality, the nature of learning and the theological disciplines. *Westerhoff*

**191. Planning and Designing Education in the Parish.** An investigation of models, strategies, methods, and resources for the church's educational ministry, with special attention to the Church School. *Westerhoff*

**192. Ethnicity and the Church's Mission and Ministry.** Applying the insights of cultural anthropology to evangelization and nurture. *Westerhoff*

**218. Research Seminar in Religion and Education.** Various research techniques applied to issues in religion and education. Prerequisite: permission of instructor. *Westerhoff*

**220. Colloquium in Religious Education.** *Staff*

**230. Moral and Value Education.** A critical, theological investigation of Durkheim, Dewey, Simon, Kohlberg, Bull, Rokeach, and implications for education in church and society. Prerequisites: CHE 33 and CED 105. *H. Smith and Westerhoff*

**231. Pastor as Spiritual Guide.** An introduction to spirituality and spiritual formation as aspects of the church's educational ministry. *Westerhoff*

## **PASTORAL PSYCHOLOGY**

**70. Group Process and Personal Identity.** A small group experience to enhance personal growth and explore personal identity and interpersonal styles of relating. *Staff*

**164. Pastoral Counseling in a Parish Setting.** Group supervision of pastoral counseling in a local parish setting. Verbatim materials from counseling sessions will be utilized. Prerequisite: permission of instructor. *Mickey*

**170. Pastoral Conversation.** A consideration of the nature of the pastor's conversation with people in the total caring ministry grounded in the person-centered understanding of personality processes and human relationship, using textual and conversational materials. *Goodling*

**171. Pastoral Counseling.** Consideration of the structures and processes of pastoral counseling; pastoral evaluation, referral, intake contract, goals, transference, termination, and other special problems. Prerequisite: permission of instructor. *Goodling*

**172. Pastoral Care in Marriage and Family Life.** Pastoral care in marriage and family life with special emphasis on premarital guidance within the context of the local church's program of family life education. *Goodling*

**173. Psychotherapy and Sanctification.** An analysis of structuring and growth processes in psychotherapy in the light of a Christian understanding of sanctification. *Mickey*

**174. Theology and Personality Processes.** Theological and religious interpretations of basic human experiences; psychodynamic meanings of theological relationships, religious practices, and personality development. *Mickey*

**175. Pastoral Care Ministries in Critical Human Situations.** A seminar utilizing lectures by visiting professionals, case materials, resource films, and readings, to inform ministers on the casual factors, behavioral patterns, preventive and treatment programs, and the role of the church and minister in such problems as alcoholism, drug addiction, dying and death, juvenile offenses, marital crisis, suicide, mental retardation, sexual deviation, psychiatric disorders. *Goodling*

**175A. Special Practicum Projects.** For advanced students who want additional clinical experience under supervision in a pastoral care setting (inner-city; alcoholic rehabilitation; counseling; etc.). *Staff*

**176. Pastoral Care and Persons in Institutions.**

176B. Lectures by staff and ward visits at the Murdoch Center for the Mentally Retarded and the facilities in the Butner, North Carolina, complex (state hospital, alcoholic rehabilitation, training school). *Staff*

176C. Lectures by staff and ward visits at the Central Prison in Raleigh and related correctional facilities. *Staff*

176D. The church's ministry to the elderly and homebound explored through lectures, case conferences, and visits to the elderly and homebound parishioners of local Durham churches. *Goodling*

**177. Pastoral Care in the General Hospital Setting.** An examination, through intensive individual and group supervision, of the student's pastoral ministry to the ill, the dying, and the bereaved in the general hospital setting. (Not recommended for those planning to take PP 277.) *Staff*

**178. Power and Restraint in the Parish.** A theological analysis of psychopolitical dynamics of the local church. Verbatim materials from the student's church work will be utilized in the course. *Mickey*

**180. Women and Pastoral Psychology.** A seminar utilizing lecture-discussions by visiting professionals, case materials, and shared research dealing with feminine psychology, the relationship of culture to counseling, and the dynamics of sexuality in counseling. *Mickey*

**271. Marriage and Family.** The psychodynamics of marital conflict and family problems; principles and procedures in marriage and family counseling. (For seniors and Th.M. candidates.) *Staff*

**273. Seminar in Pastoral Theology: Theological Dimensions of Pastoral Counseling.** An investigation of the problems in relating materials from theology and the social sciences as they are found in pastoral theology. *Mickey*

**275. Individual Study in Pastoral Psychology.** Selected readings in major issues in pastoral psychology issuing in a research or honors paper. *Staff*

**277-A,B,C. Basic Clinical Pastoral Education.** Units of Basic CPE offered in the summer, fall, and spring in programs accredited by ACPE. (Two course units each, maximum credit.) *Staff*

**278. Psychological Theories of Personality.** A systematic presentation of leading personality theories, with reference to developmental processes (motivation, cognition, learning, etc.) and their implications for Christian ministry. *Mickey*

**281-A,B,C. Advanced Clinical Pastoral Education in Pastoral Care and Counseling.** Pastoral care with inpatients and pastoral counseling of individuals, couples, families, and groups in a pastoral counseling center. (Two course units each.) *Staff*

## PREACHING

**30. Theory and Practice of Preaching.** The development of a theory of preaching and methods of sermon construction, including clinical experience in preaching sessions and local church settings. *Staff*

**180. From Text to Sermon.** Preaching from Biblical sources. Emphasis upon the goal and methodology of exegesis, the hermeneutic problem, and verbal communication in the present. Prerequisite: OT 11, NT 18, or equivalent. *Staff*

**181. Advanced Sermon Analysis Seminar.** A critical study, on the basis of selected sermons and student presentations, of principal and practical problems facing the contemporary preacher. *Bergland and others*

**182. Advanced Preaching: Practice and Evaluation.** An advanced laboratory course for extra competence in the preparation, delivery, and evaluation of sermons. Prerequisite: PR 30 and permission of instructor. *Bergland*

**183. Preaching in the Black Community.** A study of the style and content of black preaching with attention to the unique roles of black preachers in society. An analysis of the essential characteristic of preaching in the black church. *Staff*

**185. Preaching Values in Non-Biblical Sources.** A critical examination of select samples of contemporary drama, poetry, and fiction, for homiletical purposes. *Staff*

**186. Twentieth-Century Preaching.** A study of contemporary preaching based on printed, recorded, audio- and video-taped sermons of leading homiletics of our age. *Staff*

**187. Pre-Reformation Preaching.** Sermons, handbooks, and other historical sources studied in relation to Biblical preaching and the liturgical church, the problem of popular ministry, and the issues of Christian reform. Prerequisite: CH 13. *Staff*

**188. Post-Reformation Preaching.** A study of the theological trends and significant personalities in the preaching tradition from the sixteenth century to the present. *Staff*

**189. Preaching in Context.** An analysis of preaching in the context of worship with consideration of the church and liturgical year, ecclesiastical environment, and the contemporary situation. *Bergland*

**193. Theology and Preaching.** An examination of the relation of systematic theology and homiletical presentation. *Staff*

**196. Preaching in the Parish.** A consideration of preaching in relationship to pastoral duties and the total task of ministry with attention to week-by-week preaching in the parish setting. Some attention will be given to funerals and crisis situations. *Bergland*

## WORSHIP AND CHURCH MUSIC

**166. Worship as a Pastoral Concern.** A practical course dealing with worship as an expression of a pastor's concern for Christian education, pastoral care, evangelism, theology, and social action. Opportunity will be given for students to evaluate themselves as worship leaders. *Willimon*

**167. Baptism and the Lord's Supper.** Study of these sacraments with attention given to major representative traditions and to varieties of present observance and practice. *Willimon*

**168. Worship in the Wesleyan Tradition.** The history, development, and current trends in United Methodist worship along with practical experience and concerns related to worship leadership in United Methodist churches. *Willimon*

**178. Christian Worship.** A survey of the history of Christian corporate worship. Examination of the major Biblical, historical, and theological developments in worship from Old Testament times to the present. Readings in liturgical thought through the ages with comparative study of selected liturgical traditions. *Willimon*

**180. Church Music.** A two-fold study including: (1) a survey of the great monuments of church music; (2) musicianship, song-leading, and basic conducting with an emphasis upon the selection and use of hymns and other music from the *Methodist Hymnal* in public worship. *Hanks*

**184. New Forms of Worship.** Workshop in corporate worship as central in the liturgical life of the church, and of both traditional and innovative means of communication, celebration, and witness, through shared experiences in multimedia center, field visits, and mini-workshops with resource persons in the various media.

**250. Advanced Seminar in Liturgical Studies.** Reading and research in a selected area of liturgical study to be announced. *Willimon*

**251. Studies in Spirituality.** A consideration of different dimensions of the spiritual life. *Staff*

## V. Clinical Training and Internships

### CLINICAL TRAINING IN PASTORAL PSYCHOLOGY

Students may earn up to two course credits for a quarter or unit of clinical pastoral education in programs accredited by the Association for Clinical Pastoral Education (ACPE).

Students involved in clinical training under the direct supervision of members of the pastoral psychology staff during the academic year should register for credit under PP 277 for two course units unless a course credit has already been received for PP 177, in which case only one rather than two credits will be granted for the CPE quarter. Students should apply for such training through the director of clinical pastoral education.

Students involved in clinical training in summer CPE quarters should register with ACPE and the associate dean for curricular affairs as soon as accepted for training by a chaplain supervisor. Upon the receipt of a supervisor's report at the end of the training period the student will receive two course units of transfer credit.

### INTERNSHIPS

In consultation with the director of field education and the associate dean for curricular affairs, an individually designed internship may be developed in a particular ministry vocational area of interest. Under certain circumstances it may be possible to earn one unit of field education and two course credits through such internships. Such programs must be formulated and recorded in advance in the offices of both field education and curricular affairs.

**125-126. Special Ministry Internship.** When a student needs to develop professional competencies in a highly specialized form of ministry, the director of field education will assist in designing an appropriate learning contract and in negotiating for a suitable placement setting, provided the arrangements meet the basic criteria approved by the Field Education Committee.

**131-132. Ministry Through Social Agency Internship.** A twelve-month placement in a regular personnel position in a social service agency to meet the job



description of the agency and to develop a personal mode and style of ministry in a secular setting through understanding, appreciation, involvement in, and critical theological reflection upon environment, structures, values, and decision-making processes as conveyed by the conduct of the agency.

**137–138. Parish Ministry Internship.** A twelve-month placement, individually designed to engage the student in specified learnings in a wide variety of ministry functions in a local parish, under qualified supervision and using the guidelines of a learning contract.

**143–144. Campus Ministry Internship.** A nine-to twelve-month placement in approved locations designed to provide special learnings in delivering a ministry to college students under qualified guidance and utilizing a learning contract which specifies seminars, a personal journal, directed reading, and consultations to develop competency in these functions.

**175–176. Clinical Pastoral Education Internship.** A twelve-month placement in a clinical program accredited by the Association for Clinical Pastoral Education (ACPE).

**197–198. Mission Internship.** A special internship to prepare for service in church missions may be arranged by enlisting in the national or overseas program of the United Methodist Board of Global Ministries for one to three years. As a requirement for agency planning, applications should be initiated in the fall of the middler year. Other denominational and/or work-study experiences abroad may be given field education credit by special arrangement with the director of field education.

## Department of Religion—Graduate Courses

The following courses are offered periodically in the Graduate Department of Religion by Department of Religion faculty and may be taken by divinity students with permission of the instructor.

- 212. Policy-Making and Theological Ethics
- 217. Islam in India
- 218. Religion in Japan
- 221. Reading in Hebrew Biblical Commentaries
- 228. The Theology of the Gospel and Epistles of John
- 230. The Meaning of Religious Language
- 231. Seminar in Christianity and Contemporary Thought
- 232. Religion and Literature: Perspectives and Methods
- 233. Modern Narrative and Religious Language
- 238. Jewish Responses to Christianity
- 239. Introduction to Middle Egyptian
- 244. The Archaeology of Palestine in Hellenistic-Roman Times
- 248. The Theology of Karl Barth
- 258. Coptic
- 280. The History of Religions
- 281. Phenomenology and Religion
- 282. Myth and Ritual
- 284. The Religion and History of Islam
- 287. The Scriptures of Asia
- 288. Buddhist Thought and Practice
- 289. World Religions and Social Change
- 302. Studies in Intertestamental Literature
- 304A. Targumic Aramaic
- 306. Language and Literature of the Dead Sea Scrolls

- 307. Syriac
- 323 A-B. Comparative Semitic I-II
- 324. Readings in the History of Religion
- 360. Special Problems in Religion and Culture
- 361. Language and Biblical Criticism
- 380. Existentialist Thought



# Appendix

## ENROLLMENT SUMMARY 1978-79

Divinity School Students, total 384

344	M. Div.	(254 men, 90 women)
8	M.R.E.	(0 men, 8 women)
8	Th.M.	(5 men, 3 women)
24	Special Students	(10 men, 14 women)

Graduate Division of Religion Students, total 24

3	M.A.
21	Ph.D.

Total: 408

## DENOMINATIONS REPRESENTED 1978-79

United Methodist	272	African Methodist Episcopal	3
Presbyterian, U.S.	16	Lutheran Church in America	2
Episcopal (Protestant Episcopal)	11	Roman Catholic	2
United Church of Christ	11	United Church of Canada	2
Missionary Baptist	10	Undeclared or unaffiliated	2
Southern Baptist	9	Apostolic	1
Disciples of Christ	8	Apostolic (Church of God)	1
American Baptist	7	Christian Missionary Alliance	1
United Presbyterian	7	Pentecostal Holiness	1
National Baptist	5	United Holy Church of America	1
Baptist (other)	4	Wesleyan	1

## GEOGRAPHICAL DISTRIBUTION 1978-79

North Carolina	177	Connecticut	3
Virginia	31	Mississippi	3
South Carolina	23	Colorado	2
Florida	18	New Jersey	2
Pennsylvania	15	Oklahoma	2
Ohio	13	California	1
West Virginia	9	Washington, D.C.	1
Texas	8	Idaho	1
Alabama	7	Kansas	1
New York	7	Louisiana	1
Maryland	6	Massachusetts	1
Arkansas	5	Minnesota	1
Illinois	5	Missouri	1
Kentucky	5	New Mexico	1
Michigan	5	Utah	1
Tennessee	5	Foreign:	
Georgia	4	Argentina	1
Indiana	4	Canada	2
Iowa	4	Phillippines	1

## DEGREES CONFERRED 1 SEPTEMBER 1978

### Master of Divinity

N. Laine Calloway  
Kathryn Jean Kort  
Clyde Terrence Nelson

Charles Taylor Rawls  
Hallie Omega Lawson Reeves

## Master of Theology

Neriah Lee Goldston

Richard Wray McBride

## DEGREES CONFERRED 30 DECEMBER 1978

### Master of Divinity

David M. Biondi  
Betsy Lee Busby  
Larry Gregory Easterling  
Stephen Mapes Heilakka  
Leonard Vernon Lassiter, Jr.

James Edwin Lavender, Jr.  
Jack Newton Lawson  
Thurman Conrad McLean  
Jennifer Van Vickle  
Hope Morgan Ward

### Master of Religious Education

Linda Denese Briggs

## DEGREES CONFERRED AT COMMENCEMENT 1979

### Master of Divinity

Franklin Lee Alexander  
David Randolph Atwood  
Robert Miller Baird  
Gary Nelson Beam  
William Robert Bell  
Frank Woolridge Buckner  
Michael Orval Buckner  
James Jeffrey Butcher  
Richard Bryan Cartwright  
Paul Wesley Chilcote  
Philip Leslie Clinton  
John Patrick Colatch  
Patricia Marston Daniels  
Dale Elizabeth Dealtrey  
Jan Johnson Dickens  
William Emmett Martin Diggs  
Steven Phillip Eason  
Christopher Frank East  
Michael Harold Elliott  
Lawrence Timothy Evans  
William Franklin Evans  
Ruth Watkins Faison  
George Mark Freeman  
Gary William Fulton  
Mary Elizabeth Garner  
Gordon Grant Geison  
Charles Franklin Gibbons  
Ralph Bentley Goodman, Jr.  
Jed Griswold  
Cynthia Lynnette Hale  
Janet Adair Hansen  
Donna Lynn Hartgrove  
Kenneth Edward Hogren  
Barry Lynn Hollar  
Joan Jennings Hope  
Gene Douglas Howard  
James Comer Howell  
Christopher Beaumont Hughes  
Larry Vertice Jones  
James Walker Kemp  
Phyllis Hoekstra Kort  
Diane Bywaters Landon  
Sally Lucius Overby Langford

Phillip Meyer Leach, Jr.  
Debbie Gail Lewis  
Isaac Donnell Lloyd  
Frank Gifford Long, Jr.  
Pamela Kay McDaniel  
David Simpson Melton  
Paul Nelson Milton  
Charles Edward Morton  
Kenneth Ronald Moss  
Gary Lee Nicholson  
Carole Roush Ogan  
David Arthur Palmer  
Gregory Vaughn Palmer  
G. Lee Parker, Jr.  
Luther Martin (Billy) Peele, Jr.  
Clyde Kenneth Penry  
Marcus Steven Portis  
Robert Henderson Ray  
Steven Paul Ricard  
John William Rintz  
Susan Alice Rogers  
Michael D. Rose  
Brette Paris Sanford  
Donald Thomas Settle  
Gary Neil Shepherd  
Lynn Bozich Shetzer  
Marilyn K. Shipman  
Katherine H. Sluder-Jordan  
Linda Suzanne Prack Snodgrass  
William Edward Snodgrass III  
Joseph Richard Stains  
Ronald Al Stanley  
David Eugene Thayer  
William Ralsten Thomas  
Thomas Field Triebel  
Karen Beth Westerfield Tucker  
Robert Long Van Buskirk II  
Mary Rhyne Von Canon  
Randy Lee Wall  
Tom Hennies Wall  
Catherine Lee Wells  
Jacqueline Ann Williams  
Mary Carol Williams



## Master of Theology

Norman David Godfrey  
George Wilson Gunn, Jr.  
Linda Wofford Hawkins

H. Thomas Hiers, Jr.  
Ann Hunter McLaughlin  
Judith Anne Shand

## Master of Religious Education

Temple Jackson Howell  
Ava Ann Sparks

Barbara A. Summey  
Heniard Gregory Waldrop

## INSTITUTIONS REPRESENTED

A and T University	1	Georgia State University	1
Adrian College	1	Gettysburg College	1
Albion College	1	Grambling State University	1
Albright College	1	Greensboro College	5
Alma College	1	Guilford College	2
American University	1	Hendrix College	3
Asbury College	1	High Point College	10
Atlantic Christian College	4	Hiram College	1
Auburn University	1	Hollins College	4
Averett College	1	Houghton College	1
Baldwin Wallace College	1	Howard University	2
Baptist College at Charleston	1	Huntingdon College	2
Barber-Scotia College	1	Illinois Wesleyan University	1
Benedict College	1	Indiana University	1
Bluefield State College	1	Iowa Wesleyan	1
Bryn Mawr College	1	Jacksonville State University	1
Calvin College	1	James Madison University	1
Campbell College	3	Knox College	1
Carson-Newman College	1	Lambuth College	2
Catawba College	2	La Salle College	2
Central College	1	Lebanon Valley College	1
Central Wesleyan College	1	Loyola College	1
Clark College	1	Marietta College	1
College of Charleston	1	Mars Hill	3
College of City of New York	1	Marshall University	1
College of Idaho	1	Martin College	1
College of Wooster	4	Medical College of Virginia	1
Columbia University	1	Methodist College	6
Converse College	1	Meredith College	2
Davidson College	6	Michigan State University	2
De Pauw University	4	Millersville State College	1
Duke University	30	Mississippi State University	1
East Carolina University	6	Morningside College	1
Edinburgh, New College	1	Morris College	1
Elizabeth City State University	1	Morris Brown College	1
Elon College	6	Morris Harvey	1
Emory and Henry	2	Norfolk State College	1
Erskine College	1	North Carolina A and T State University	3
Fairmont State College	1	North Carolina State University	7
Fayetteville State University	1	North Carolina Wesleyan College	10
Ferrum College	2	Oberlin College	4
Fisk University	1	Ohio Northern University	1
Florida Atlantic	1	Ohio State University	1
Florida Southern College	3	Ohio Wesleyan University	2
Florida State University	5	Oklahoma City University	1
Fordham University	1	Otterbein College	2
Forsyth Tech	1	Oral Roberts University	3
Fort Lauderdale College	1	Paine College	1
Francis Marion College	1	Pembroke State University	1
Frostburg State College	1	Pfeiffer College	2
Furman University	2	Potsdam State University	1
Gardner-Webb College	1	Randolph-Macon Woman's College	2
Georgetown College	1	Salem College	1
Georgia Southern College	2	Samford University	1

San Jose State University	1	University of North Carolina–Charlotte	9
Shaw University	2	University of North Carolina–Greensboro	5
Simpson College	2	University of North Carolina–Wilmington	2
Smith College	1	University of Oregon	1
Southeastern College	1	University of Pittsburgh	1
Southern Arkansas University	1	University of South Alabama	1
Southern Methodist University	3	University of South Carolina	5
Southwestern University	2	University of South Florida	2
Springfield College	1	University of Southern Mississippi	3
St. Andrew's Presbyterian College	1	University of St. Andrew's, Scotland	1
St. Augustine's University	1	University of Texas at Arlington	1
State University of New York at Brockport	1	University of Texas at Austin	1
State University of New York at Fredonia	1	University of Virginia	4
Syracuse University	1	Uppsala University	1
Texas Tech University	1	Valparaiso University	1
Towson State University	1	Vanderbilt University	1
Union College	2	Vassar College	2
University of Alabama	5	Virginia State College	1
University of Alberta	2	Virginia Wesleyan College	4
University of Arkansas	1	Wake Forest University	10
University of California	2	Western Illinois University	1
University of Chicago	1	West Virginia University	1
University of Colorado	1	West Virginia Wesleyan College	4
University of Connecticut	2	Western Carolina University	4
University of Delaware	1	William Carey	1
University of Evansville	1	William and Mary	2
University of Florida	3	Winston-Salem State University	3
University of Georgia	1	Wichita State University	1
University of Kansas	1	Wittenberg University	2
University of Kentucky	3	Wofford College	6
University of North Carolina–Chapel Hill	25	Wright State University	1
		York University	1

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